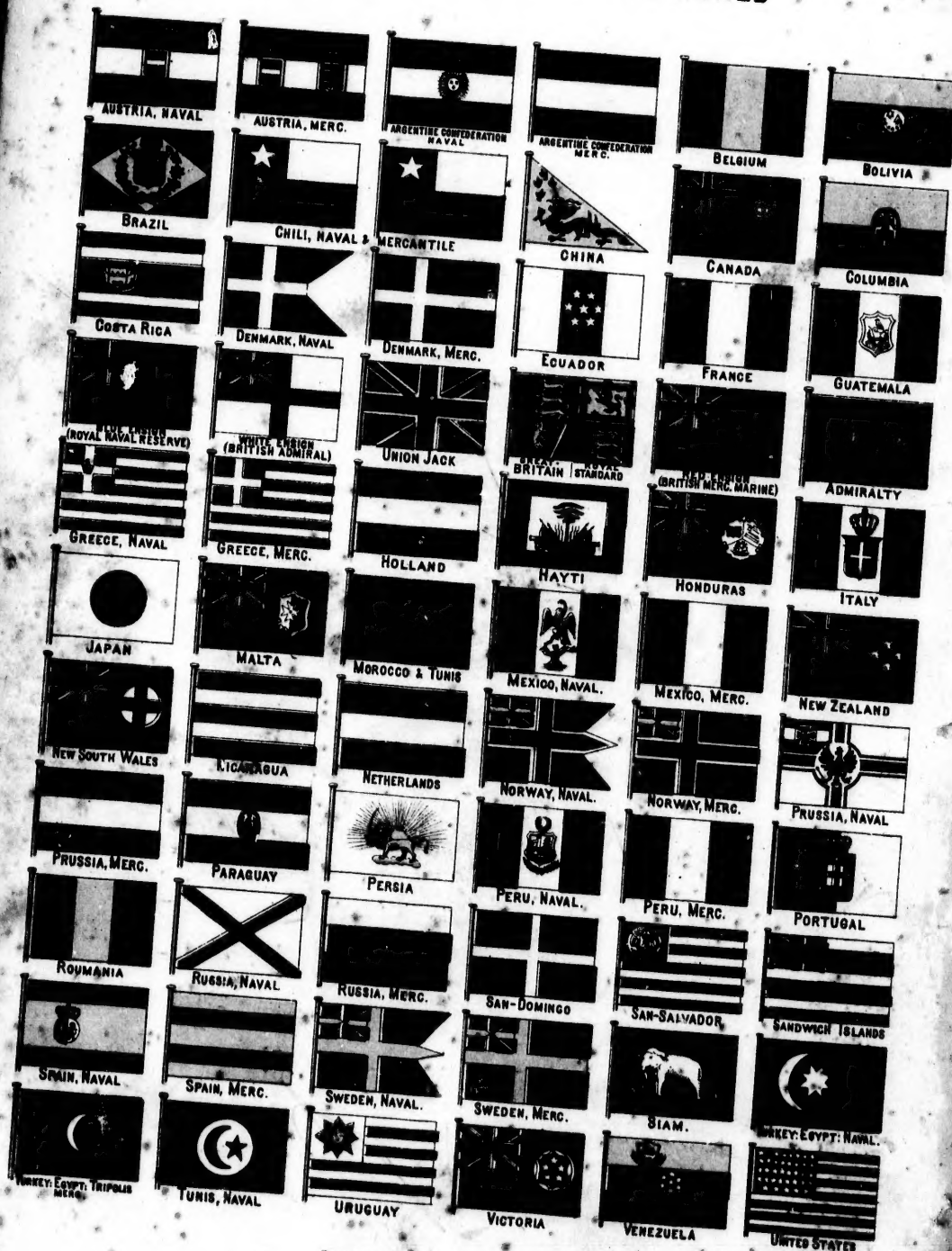


THE NAVAL FLAGS OF THE WORLD



FRONTISPIECE TO PART II OF "THE SEA"
 CASSELL PETER & GALPIN, LONDON

BEN GEORGE LITH. LONDON

THE SEA:

Its Stirring Story of Adventure, Peril, & Heroism.

BY

F. WHYMPER,

AUTHOR OF "TRAVELS IN ALASKA," ETC.

Nephew of Nathaniel Whympere,
my maternal grandfather.

P. W. ELKINGTON.

FRANK'S FATHER WAS EDWARD, President
of the Royal Institute of Counters in Waterbury
HIS BROTHERS WERE,

ILLUSTRATED.

EDWARD, THE MOUNTAINEER, WHO WAS THE FIRST
MAN TO REACH THE SUMMIT OF THE MATTERHORN,
AND OF COTOPAXI, PRESIDENT OF THE CANADIAN
ALPINE CLUB.

CHARLES, CELEBRATED ORNITHOLOGICAL ARTIST
WILLIAM, SECRETARY ROYAL ASSURANCE CO. LONDON

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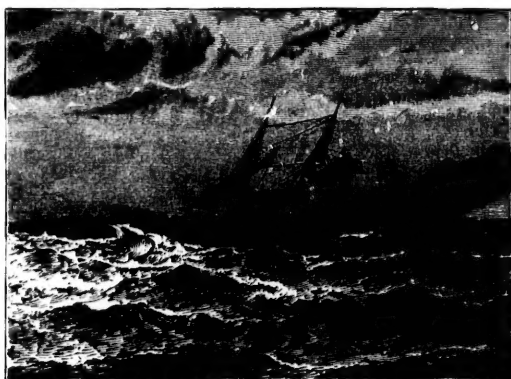
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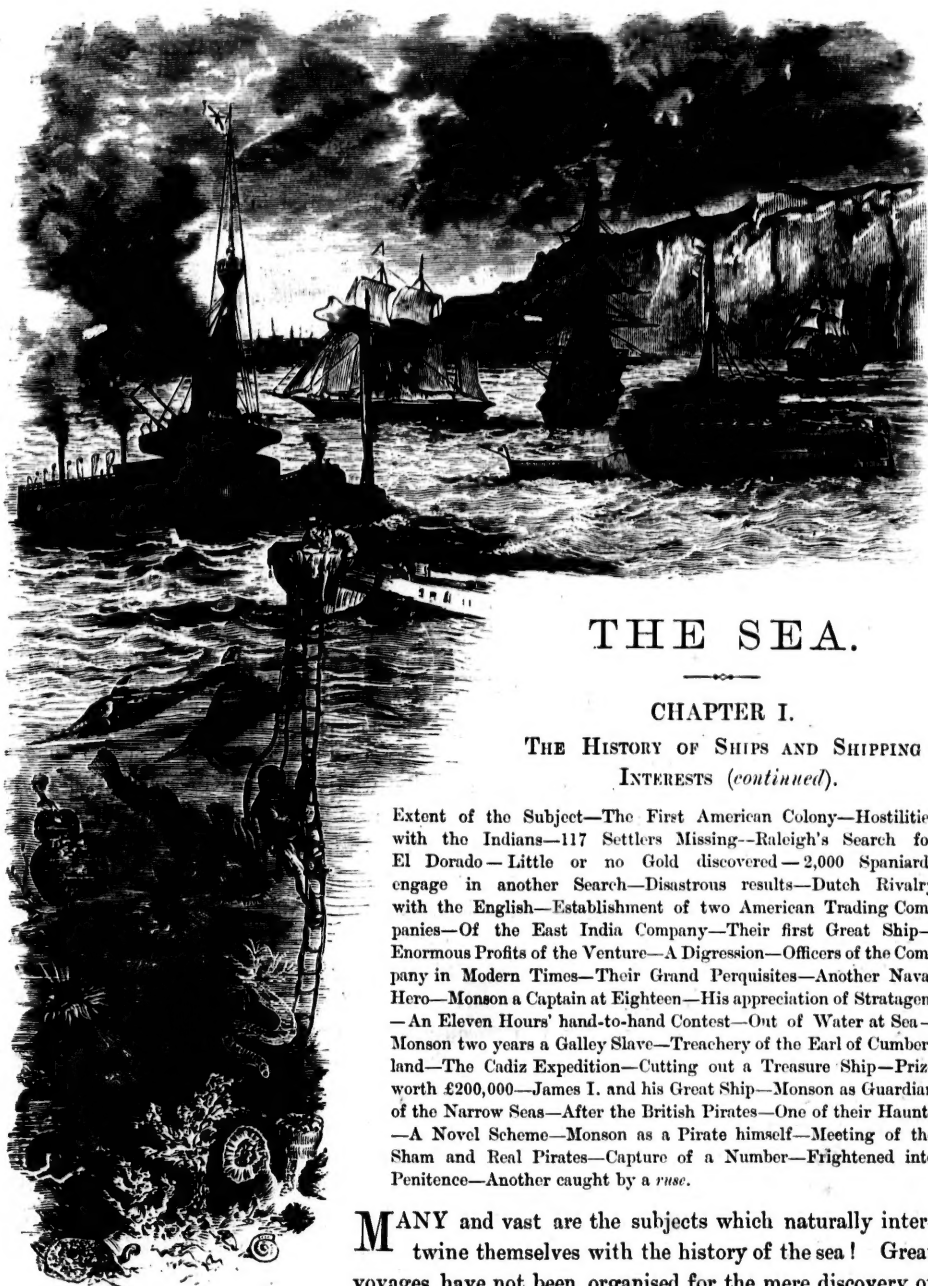
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THE SEA.

CHAPTER I.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

Extent of the Subject—The First American Colony—Hostilities with the Indians—117 Settlers Missing—Raleigh's Search for El Dorado—Little or no Gold discovered—2,000 Spaniards engage in another Search—Disastrous results—Dutch Rivalry with the English—Establishment of two American Trading Companies—Of the East India Company—Their first Great Ship—Enormous Profits of the Venture—A Digression—Officers of the Company in Modern Times—Their Grand Perquisites—Another Naval Hero—Monson a Captain at Eighteen—His appreciation of Stratagem—An Eleven Hours' hand-to-hand Contest—Out of Water at Sea—Monson two years a Galley Slave—Treachery of the Earl of Cumberland—The Cadiz Expedition—Cutting out a Treasure Ship—Prize worth £200,000—James I. and his Great Ship—Monson as Guardian of the Narrow Seas—After the British Pirates—One of their Haunts—A Novel Scheme—Monson as a Pirate himself—Meeting of the Sham and Real Pirates—Capture of a Number—Frightened into Penitence—Another caught by a *ruse*.

MANY and vast are the subjects which naturally intertwine themselves with the history of the sea! Great voyages have not been organised for the mere discovery of so much salt water—except as a means to an end—and the

good ship has almost always sailed with a definite and positive mission. The history of but a single vessel involves the history, more or less, of hundreds of people; it may mean that of thousands. So the history of the ocean is that also of lands and peoples, far off or near. Subjects the most diverse are still intimately connected with it. In the space of a few years' time, war and peace are strangely contrasted; brilliant discoveries are succeeded by disastrous failures, and heroic deeds stand side by side with shameless transactions. Take only a few of the succeeding pages, and we shall find recorded in them the stories of the early colonisation of America, and of the disastrous voyages in quest of the fabled El Dorado, followed by the brave and daring deeds of one of our greatest naval heroes; these again by the establishment of the great commercial company which once ruled India, succeeded by stories of pirates on the sea, and "bubble" promoters ashore. Sketches of maritime affairs must be "in black and white," so great are the contrasts. But let us turn to our first subject, the early voyages to, and colonisation of, the great New World.

About one hundred men formed the first little colony landed in Virginia from the expedition of Greenville in 1585. Raleigh, at his own expense, sent a shipload of supplies for them next year, but before it arrived the settlers, and the very Indians of whom such flattering accounts had been given, had quarrelled, and so many of the former had fallen as to imperil the existence of the colony; the survivors thought themselves fortunate when Drake unexpectedly arrived off the coast, and took them away. When Greenville reached the settlement, a couple of weeks after, they had left no tidings of themselves, and, wishing to hold possession of the country, he landed fifteen men, well furnished with all necessaries for two years' use, on the island of Roanoake. This voyage paid its expenses by prizes taken from the Spaniards, and by the plunder of the Azores on the way home, where they spoiled "some of the towns of all such things as were worth carriage."

Raleigh, next season, fitted out a third expedition of three vessels, with one hundred and fifty colonists, under the charge of John White, who was to be Governor, with twelve chosen persons as assistants: their town was to be named after himself. After narrowly escaping shipwreck, they arrived off Roanoake, and White, taking the pinnace, went in search of the fifteen men left in the preceding year, but "found none of them, nor any sign that they had been there, saving only the bones of one of them, whom the savages had slain long before." Next day they proceeded to the western side of the island, where they found the houses which had been erected still standing, but the fort had been razed. They "were overgrown with melons of divers sorts," and deer were feeding on the melons. While they were employed repairing these, and erecting others, one George Howe wandered some two miles away, when a party of half-naked Indians, who were engaged in catching crabs in the water, espied him. "They shot at him, gave him sixteen wounds with their arrows, and after they had slain him with their wooden swords, they beat his head in pieces, and fled over the water to the main." Captain Amadas had taken an Indian named Manteo to England with him, and this man, now with White, was sent to the island of Croatoan, where his tribe dwelt, to assure them of the friendship of the English, and an understanding was established. It was ascertained that the men left the preceding year had been treacherously attacked by hostile natives, and that two had been killed, and their storehouse burned; the remainder had successfully fought through the Indians to

the water's edge, and had escaped in their boat, whither they knew not. Their fate was never learned. Manteo's friends entreated that a badge should be given them, as some of them had been attacked and wounded the previous year by mistake. Something similar occurred shortly afterwards, when the English, burning to avenge Howe's death, attacked a settlement in the night, shooting one of the men through the body before they discovered that the natives there were of the friendly tribe. According to Raleigh's instructions, Manteo was christened, and called lord of Roanoake. About this time, the wife of Ananias Dare, one of the twelve assistants, was delivered of a daughter, who, as the first English child born in that country, was very naturally baptised by the name of Virginia. And now the ships had unladen the planter's stores, and were preparing for departure. It was deemed advisable that two of the assistants should go back to England as factors and representatives of the company, but all appeared anxious to stop. At length the whole party, with one voice urged White to return, "for the better and sooner obtaining of supplies and other necessaries for them." This he very naturally refused, as it would look at home as though the Governor had deserted his band, and had led so many into a country in which he never meant to stay himself. But at last he yielded to them, and was furnished with a testimonial setting forth the reasons. White arrived in England at a period when the danger of a Spanish invasion was imminent, a most unfortunate time for the colonists. When Raleigh was preparing supplies for them, which Greenville was to have taken out, the order was countermanded. White represented the urgency of their wants, and two small pinnaces were despatched with supplies, and fifteen planters on board. Instead of proceeding to America, they commenced cruising for prizes, till, disabled and rifled by two men-of-war from Rochelle, they were obliged to retreat to England. And now Raleigh, who is said to have already expended £40,000 over these attempts at colonisation, appears to have sickened of them, and to have assigned his patent to a company of merchant adventurers. White did his utmost for the poor settlers he represented, and learning that some English ships were about to proceed to the West Indies, tried his best to arrange that they should take some provisions and stores to Virginia, the upshot of which was that he only obtained a passage for himself.

The colony had now been left to itself for two years. When the vessels anchored near the spot, they observed a great smoke on the island of Roanoake, and White, who had a married daughter among the colonists, hoped that it might proceed from one of their camps. Two boats put off from the ships, and the gunners were ordered to prepare three guns, "well loaded, and to shoot them off with reasonable space between each shot, to the end that their reports might be heard at the place where they hoped to find some of their people." Their first search was vain, for though they reached the spot from which the smoke came, there were no signs of life there. The next day a second search was made, but one of the boats was swamped, and the captain and four others were drowned. The sailors averred that they would not seek further for the colonists; they were, however, over-ruled, and another attempt was made. Again they noted a great fire in the woods, and when the boat neared it, they let their grapnel fall, and sounded a trumpet, playing tunes familiar at the time; but there was no response. They landed at daybreak, and proceeded to the place where the colony had been left. "All the way," says White, "we

saw in the sand the print of the savages' feet trodden that night; and as we entered up the sandy bank, upon a tree at the very brow thereof were curiously carved these fair Roman letters, C R O, which letters presently we knew to signify the place where I should find the planters seated, according to a token agreed upon at my departure." He had told them in case of distress to carve over the letters or name a cross; but no such sign was found. At the spot itself where he expected the settlement, he found the houses taken down, and the place enclosed with logs or trees. Many heavy articles, bars of iron, pigs of lead, shot, and so forth, were lying about, almost overgrown with grass and weeds. Five chests, of which three were his own, were found at last, but they had been evidently broken into by the savages. "About the place," says White, "many of my things, spoiled and broken, and my books torn from the covers, the frames of some of my pictures and maps rotten and spoiled with rain, and my armour almost eaten through with rust." But on one of the trees or chief posts of the enclosure, the word CROATOAN was carved in large letters, and he now understood that they were with Manteo's tribe. It was agreed that they should make for that place; but again fortune was against them.

One disaster followed another, and when at last they left Virginia, it was with the intention of wintering in the West Indies, and returning the following spring; but even this was not to be. Stress of weather drove them to the Azores, and once there it was naturally decided to return to England. No later attempt was made to succour them, and the fate of ninety-one men, seventeen women, and nine children, and of two infants born there, the names of which are preserved in Hakluyt, was never known. Raleigh has been greatly blamed for inhumanity in this connection. His excuse is that it was the busiest part of his eventful life. He had just borne his part in the defeat of the Armada; had been one of eleven hundred gentlemen who ventured on the unfortunate Portuguese expedition; had been sent, in what was regarded as an honourable banishment, but none the less an exile, to Ireland; on regaining his place in the queen's favour had taken an active part in Parliamentary service; was concerned in a fresh naval expedition from which he was recalled by the queen, and had his first taste of that cell in the Tower, which later on he left only for the scaffold.

In 1595, we find Raleigh bent on a discovery which had long been a feverish dream with him—the conquest of the fabled El Dorado. It was but the result of the discoveries of the Spaniards in Mexico and Peru; and all over the Spanish main there was a fond belief extant in something greater and richer than anything yet found. One of the traditions of the day was that a relative of the last reigning Inca of Peru, escaping from the wreck of that empire, with a large part of its remaining forces and treasure, had established himself in a new country, which was found to be itself as rich in mines as that from which he had migrated. "The Spaniards," says Southey, "lost more men in seeking for this imaginary kingdom than in the conquest of Mexico and Peru."

Raleigh was encouraged in this enterprise by such men as Cecil, and the Lord High Admiral Howard, who contributed to its cost. His idea was to enter the land of gold by the Orinoco, and prior to his own voyage he despatched a ship, under Captain Whiddon, to reconnoitre on that part of the coast, and to seek information at the island of Trinidad. When Raleigh and his squadron had arrived at one of its ports he found a company of Spaniards

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HALEIGH AT TRINIDAD.

from whom he cautiously extracted all they knew or believed concerning Guiana. "For these poor soldiers," says he, "having been many years without wine, a few draughts made them merry; in which mood they vaunted of Guiana, and of the riches thereof, and all what they knew of the bays and passages, myself seeming to purpose nothing less than the entrance or discovery thereof, but bred in them an opinion that I was bound only for the relief of those English whom I had planted in Virginia, whereof the bruit was come among them, which I had performed in my return if extremity of weather had not forced me



SIR WALTER RALEIGH.

from the said coast." Raleigh stopped some time here, not merely to extract all the information possible, but also to be revenged on the Governor, who the year before had behaved treacherously, entrapping eight of Captain Whiddon's men. This he accomplished by taking and burning one of their new towns, and detaining the Governor, Berrio, at his pleasure on board. The same day two more of his ships arrived, and they prepared for the purposed discovery. "And first," says Raleigh, "I called all the captains (*i.e.*, caciques or native chiefs) of the island together that were enemies to the Spaniards; * * * and by my Indian interpreter, which I carried out of England, I made them understand that I was the servant of the queen, who was the great cacique of the north, and a virgin, and had more caciqui under her than there were trees on that island; that she was an enemy to the Castellani (*i.e.*, Spanish from Castille) in respect of their tyranny and oppression,

and that she delivered all such nations about her as were by them oppressed; and having freed all the coast of the northern world from their servitude, had sent me to free them also, and withal to defend the country of Guiana from their invasion and conquest. I showed them her Majesty's picture, which they so admired and honoured as it had been easy to have brought them idolatrous thereof." Raleigh used the Governor with courtesy and hospitality, and sounded him well concerning Guiana; and Berrio conversed with him readily, having no suspicion of Raleigh's intentions. But when Sir Walter told him that he had resolved to see that country, the Governor "was stricken into a great melancholy," and tried all he could to dissuade him. He described the rivers as full of sandbanks, and so shallow that no bark or pinnace could ascend them, and scarcely a ship's boat; that they could not carry provisions for half the journey, and that the "kings and lords of all the borders of Guiana had decreed that none of them should trade with any Christians for gold, because the same would be their own overthrow, and that for the love of gold the Christians meant to conquer and dispossess them altogether." The golden country was 600 miles farther from the coast than he had been informed, which piece of news Raleigh carefully concealed from his company, for he was resolved "to make trial of all, whatsoever happened." After many explorations, on the part of his captains, of the rivers, the mouths of which were found to be as shallow as he had been told, he, with 100 men divided in a galley, four boats and barges, and carrying provisions for a month, resolved to see for himself.

From the spot where the ships lay, they had as much sea to cross as between Dover and Calais, the waves being high, and the current strong. They at length entered a stream, which Raleigh called the River of the Red Cross, and where they noted Indians in a canoe and on the banks. Their interpreters, Ferdinando and his brother, went ashore to fetch fruit, and drink with the natives, when they were seized by the chief with the intention of putting them to death, because "they had brought a strange nation into their territory to spoil and destroy them." Ferdinando and his brother managed to escape, the former running into the woods, and the latter reaching the mouth of the creek where the barge was staying, when he cried out that his brother was slain. On hearing this, "we set hands," says Raleigh, "on one of them that was next us, a very old man, and brought him into the barge, assuring him that if we had not our pilot again we would presently cut off his head." The old man called to his tribe to save Ferdinando, but they hunted him through the forest, with shouts that made the whole neighbourhood resound. At length he reached the water, and climbing out on an overhanging tree, dropped down and swam to the barge, half dead with fear. The old Indian was retained as pilot.

Ascending with the flood, and anchoring during ebb tide, they went on, till on the third day their galley grounded, and stuck so fast that it was a question whether their discoveries must not end there; but at last, by lightening her of all her ballast, and hauling and tugging, she was once more afloat. Next day they reached a fine river, where there was no flood tide from the sea, and they had to contend against a strong current; "and had then," says Raleigh, "no shift but to persuade the company that it was but two or three days' work" to reach their destination. "When three days were overgone, our companies began to despair, the weather being extreme hot, the river bordered with very high trees that kept away the air, and the current against us every day stronger than the other; but we once

more commanded our pilots to promise to end the next day, and used it so long as we were driven to assure them from four reaches of the river to three, and so to two, and so to the next reach; but so long we laboured that many days were spent, and we driven to draw ourselves to harder allowance, our bread even at the last and no drink at all; and ourselves so wearied and scorched, and doubtful withal whether we should ever perform it or no, the heat increasing as we drew towards the line, for we were now in five degrees. The farther we went on (our victuals decreasing and the air breeding great faintness) we grew weaker and weaker, when we had most need of strength and ability, for hourly the river ran more violently than other against us; and the barge, wherries, and ship's boat had spent all their provisions, so as we were brought into despair and discomfort, had we not persuaded all the company that it was but one day's work more to attain the land, where we should be relieved of all we wanted; and if we returned that we should be sure to starve by the way, and that the world would also laugh us to scorn." The old Indian now offered to take them to a town at a short distance, where they could get bread, hams, fish, and wine, but to reach it they must leave the galley, and proceed up a smaller stream with the barge and wherries. Raleigh, with two of his captains and sixteen musketeers started, but when, after hard rowing, it grew night, and there were no signs of the place, they feared treachery. The old native still assured them that it was but a little further, and they rowed on past reach after reach, and still no town or settlement could be discovered. At last they decided to hang the pilot, and Raleigh states distinctly that "if we had well known the way back again by night, he had surely gone, but our own necessities pleaded sufficiently for his safety, for it was now as dark as pitch, and the river began so to narrow itself, and the trees to hang from side, so as we were driven with arming swords to cut a passage through those branches that covered the water." At last, an hour after midnight, a light was seen, and the welcome noise of the village dogs heard, as they rowed towards it. There were few natives there at the time, but some quantity of provisions was obtained, with which they returned to the galley next day. The natives called this stream the river of alligators, and a negro, who was one of the galley's crew, venturing to swim in it, was devoured by one of those animals. Raleigh says of the country through which it passed, "whereas all that we had seen before was nothing but woods, prickly bushes, and thorns, here we beheld plains of twenty miles in length, the grass short and green, and in divers parts groves of trees by themselves, as if they had with all the art and labour in the world been so made of purpose; and still as we rowed, the deer came down feeding by the water's side, as if they had been used to a keeper's call."

Still proceeding up the great river, their provisions almost exhausted, they observed four canoes coming down the stream, to which they gave chase. The people in two of the larger escaped into the woods, and left behind a large stock of bread, which was very welcome. Searching the woods, Raleigh came across an Indian basket, which proved to be that of a refiner, as it contained quicksilver, saltpetre, and other things for gathering and testing metals, and also the dust of such as he had discovered. Raleigh offered £500 to the soldier who should take one of three Spaniards known to have been with this party, but they escaped. He was more fortunate with the Indians who had accompanied them, and one of them was taken for pilot, from whom he learned that the richest mines were

"defended with rocks of hard stones, which we call white spar" (presumably quartz). He states that in the canoes which escaped there was a good quantity of ore and gold.

Still proceeding, on the fifteenth day, to their great joy, the distant mountains of Guiana came into view, and the same day brought them in sight of the great Orinoco, about the branches of which river thousands of tortoise eggs were found, which proved to be "very wholesome meat, and greatly restoring." The natives, too, were friendly, and to Raleigh's credit, be it said, he appears in all cases to have treated them fairly and well. With the cacique he made merry, treating the natives to a small quantity of Spanish wine, they in return bringing in fruits, bread, fish, and flesh. The chief conducted them to his own town, "where," says Raleigh, "some of our captains caroused of his wine till they were reasonably pleasant; for it is very strong with pepper, and the juice of divers herbs digested and purged; they keep it in great earthen pots of ten or twelve gallons, very clear and sweet; and are themselves at their meetings and feasts the greatest carousers and drunkards in the world." The settlement stood on a low hill, "with goodly gardens a mile compass round about it." And so they proceeded, meeting friendliness everywhere among the natives, till the rivers commenced fast rising, and they could not row against the stream. Small parties were then detailed ashore to look for mineral stones. Raleigh describes the country as lovely; "the deer crossing in every path; the birds towards the evening singing on every tree with a thousand several tunes; cranes and herons, of white, crimson, and carnation, perching on the river's side; the air fresh with a gentle easterly wind; and every stone that we stooped to take up promised either gold or silver by its complexion. * * * I hope some of them cannot be bettered under the sun; and yet we had no means but with our daggers and fingers to tear them out here and there, the rocks being most hard, of that mineral spar aforesaid, which is like a flint, and is altogether as hard, or harder; and besides, the veins lie a fathom or two deep in the rocks. But we wanted all things requisite, save only our desires and good will, to have performed more, if it had pleased God." Some of the others brought glistening stones, and among them, apparently pyrites, which very commonly accompanies gold, but of the precious metal itself Raleigh could hardly boast a speck in truth. His account of these discoveries is mixed up with the strangest fables, as for example of the Ewaipanoma, a people of that country whose eyes were in their shoulders, and their mouths in the middle of their breasts!

The ships were regained, and the expedition sailed for England, where Raleigh, in spite of the work which he published under the boastful title of "The Discovery of the Large, Rich, and Beautiful Empire of Guiana, with a Relation of the Great and Golden City of Manoa (which the Spaniards call El Dorado)," &c., lost both popular and queenly favour, having brought home no booty. In fact the narrative given to the world rather did him harm than good, for it is full of excuses, admits that the voyage had been most unprofitable, and is undoubtedly not veracious in many particulars. His arguments for immediately attempting the conquest of Guiana were not regarded. Yet still he had means and friends. Two expeditions to Guiana were afterwards organised, neither of which resulted in any discovery or profit.

But others besides Raleigh and his followers had been inflamed with the accounts floating about concerning El Dorado. Berrio, the Spanish Governor before mentioned,

despatched his camp master to Spain to levy men, sending with him some golden carvings and "images, as well of men as beasts, birds, and fishes," in order to obtain further aid from the king and his subjects. This agent, Domingo de Vera, was a man of ability, and thoroughly unscrupulous; he courted notoriety by appearing always in a singular dress, adorned with golden trinkets and jewels, and being of great stature, and riding always a great horse, attracted much attention, being known popularly as the Indian El Dorado. He was successful in raising seventy thousand ducats at Madrid, and a large additional



RALEIGH ON THE RIVER.

sum at Seville: obtained authority for raising a band of adventurers, and five good ships to carry them out. Men of good birth left their estates, respectable middle-class men gave up their incomes and employments, sold everything, and embarked with their wives and children; even a prebendary, and many priests, gave up sure prospects of advancement to join the expedition, which at last aggregated two thousand persons. Berrio had only asked for 300, and when the expedition reached Trinidad, they had to be apportioned to various other settlements; the women and children being serious encumbrances at the time, and enduring great misery. The savage Caribs attacked their canoes when proceeding to St. Thomas and elsewhere. One detachment of three hundred were reduced to thirty souls by the crafty Indians, who, after very partially supplying them with provisions, watched them sink with weakness and disease till they became an

easy prey. In some places they set fire to the grass, and the wretched travellers, unable to fly before it, were burned to death. Those who reached the Orinoco, not merely found no gold, but little of that abundance so glowingly described by Raleigh. Vera himself soon died in Trinidad, and Berrio did not long survive him. Of the original two thousand who left Spain, it is doubtful whether a tithe survived the first year. Had Raleigh been a favourite with the people, or had his character been above suspicion, it is more than likely that some similar disaster might have had to be recorded on the pages of English history.

Sir Walter Raleigh has enlightened us,* as regards the condition of commerce and of the English mercantile marine shortly before the union of the crown of England and Scotland, in a remarkable paper, "which contains," says a competent authority, "many remarkable commercial principles far in advance of the age in which the author lived." He states that the ships of England were not to be compared with those of the Dutch, and that while an English ship of one hundred tons required a crew of thirty men, the Dutch would sail such a vessel with one-third that number. Holland became the depôt of numerous articles, "not one hundredth part of which were consumed by the Dutch," while she gave "free custom inwards and outwards for the better maintenance of navigation and encouragement of the people to that business." Sir Walter tells us that France offered to the vessels of all nations free customs twice and sometimes three times each year when she laid in her annual stock of provisions, and also in such raw materials as were not possessed by herself in equal abundance. Denmark granted free customs the year through, excepting only one month. The Dutch were the great carriers by sea, in consequence of the facilities granted them at home, "and yet the situation of England lieth far better for a storehouse to serve the south-east and the north-east kingdoms than theirs do; and we have far the better means to do it if we apply ourselves to do it." He complained that although the greatest fishery in the world is on the coasts of England, Scotland, and Ireland, Holland despatched to the Baltic and up the Rhine more than a million pounds sterling worth of herrings, where we did not export one. He states that Holland trafficked in "every city and port of Britain with five or six hundred ships yearly, and we chiefly to three towns in their country and with forty ships; the Dutch trade to every port and town in France, and we only to five or six," and that the Dutch were even ruining our Russian trade. In spite of probable exaggerations in Raleigh's statements as laid before the King, it is evident that with the laws as they stood, the Dutch must have had, as regards their commercial marine, very much the best of it.

While there was much depression among the shipowners, they did not overlook the advantages to be derived from intercourse with the newly-discovered world of North America. Though the expeditions promoted by Raleigh and his associates had been unfortunate, profitable ventures were soon after made, beads, trinkets, and articles of little value being exchanged for skins and furs obtained by the Indians; and Captain Gosnold made in 1602 the first *direct* voyage across the Atlantic to America—all other English sailors at least having sailed by way of the Canaries and West Indies. "Steering in a small bark, directly across the Atlantic, in seven weeks he reached Cape Elizabeth on the coast of Maine.

* "Select observations of the incomparable Sir Walter Raleigh relating to trade," as presented to King James.

Following the coast to the south-west, he skirted 'an outpoint of wooded land;' and about noon of the 14th of May he anchored 'near Savage Rock,' to the east of York Harbour. . . . Not finding his 'purposed place' he stood to the south, and on the morning of the 15th discovered the promontory which he named Cape Cod. He and four of his men went on shore. Cape Cod was the first spot in New England ever trod by Englishman." He traded with the natives in peltries, sassafras, and cedar-wood, and was probably the first to sow English corn on the Island of Martha's Vineyard. In 1606 two maritime companies, the "Plymouth Adventurers," and the South Virginia Company, were authorised to colonise and form plantations; the first having right to the territory which now embraces Pennsylvania, New Jersey, and New York; and the second, to that which now includes Maryland, Virginia, and North and South Carolina. A single steamer of these days has often landed more emigrants at New York than did a dozen of these early expeditions at other points, for their progress at first was painfully slow.

The great East India Company was formed in England more than a century after the discovery, by Vasco de Gama, of the route to India *via* the Cape. The first voyage of Thomas Cavendish is worthy of more note than it has received, inasmuch as it contributed more than anything else to awakening the merchants of London to the importance of the trade prospects there. Starting in July, 1586, he circumnavigated the globe, passing through the Straits of Magellan westward, in eight months less than Drake. He was the first English navigator to discern the value of the position of St. Helena, to describe with accuracy the Philippine Islands, and to bring home a map and description of China; and what is more remarkable is the fact that he was scarcely more than twenty-two years of age when he took command in this first most adventurous voyage. He was shipwrecked five or six years later on the coast of Brazil, and lost his life there. Through Mr. Thorne, an English merchant, often mentioned in connection with these early voyages, the London merchants gained a considerable amount of knowledge relating to the important trade with the Indies enjoyed by the Spanish and Portuguese; and at length, in the year 1600, more than 200 shipowners, traders, and citizens associated, and formed a body corporate, having received many special privileges from the Crown, "including," says Lindsay,* "that of punishing offenders either in body or purse, provided the mode of punishment was not repugnant to the laws of England. Its exports were not subjected to any duties for the four first voyages, important indulgences were granted in paying the duties on imports, and liberty was given to export £30,000 each voyage in coin or bullion, provided £6,000 of this sum passed through the Mint. But not exceeding six ships, and an equal number of pinnaces, with 500 seamen, were allowed to be despatched annually to whatever station might be formed in India, with the additional provisos that the seamen were not at the time required for the service of the Royal Navy, and that all gold and silver exported by the Company should be shipped at either London, Dartmouth, or Plymouth." The Company started with a capital of £72,000, and equipped five vessels for the first venture, the largest of which was the *Dragon* of 600 tons; her commander, according to the practice of the day, receiving the title of "Admiral of the Squadron." The first voyage was very successful; important commercial

* "History of Merchant Shipping and Ancient Commerce."



MONSON AND THE BISCAYAN SHIP.

relations were formed with the King of Achin, in Sumatra; and a factory established at Bantam, after which the ships returned to England richly laden.

A serious rival was, however, in the field. The separation of the Dutch provinces from the crown of Spain had caused their merchants to be sent abroad to seek new fields of commerce, and as they had gained an intimate knowledge of Spanish and Portuguese affairs, they were then the predominant naval power in the Indian Seas, and were quite ready to contend against any supremacy on the part of England's traders. English merchants were, however, ready for them, the profits on the first expedition having incited them to grander efforts. They obtained a new Charter in 1609, and the Company constructed a vessel of larger size than any hitherto employed in the English merchant service, which they named the *Trades' Increase*. She was 1,200 tons, and even her pinnace was 250 tons. At her launch, the Company gave a great banquet, at which the dishes were of china ware, then a great novelty in England. With these and two other vessels Sir Henry Middleton set sail, touching at Mocha, on the Red Sea, where, entrapped ashore by the Mohammedans, eighty of his crew were massacred, sixteen others disabled, and he himself severely wounded. Proceeding to Bantam, the *Trades' Increase* was unfortunately shipwrecked, and poor Middleton died heartbroken at the failure of the expedition. But other voyages followed, which were enormously profitable to the Company. One expedition is mentioned which, "though absent only twenty months, earned in that time a profit of no less than 340 per cent." "Factories"—trading posts or forts—were established, and the Company obtained the favour of the Moghul Emperor, Jehangir, more especially after they had been fortunate enough to repel some of the Portuguese who were attacking his posts. They even contrived to obtain a footing in Japan, through the influence of William Adams, a Kentish man, who had been pilot on one of the earliest Dutch expeditions, and who stood high in the Emperor's favour. The intercourse then opened was allowed to die out, and has only been re-established late in our own time. In seventeen years after the first establishment of the Company its affairs had become so prosperous that its stock reached a premium of 203 per cent., and the Dutch East India Company suggested an amalgamation of the two corporations with a view to exclude and crush their common enemy, the Portuguese. This was never carried into effect, but in 1619 a treaty of trade and friendship was established. They were to "cease from rivalry, and apportion the profits of the different branches of commerce between them." Alas! all this amicable billing and cooing were to speedily end; such self-abnegation was found hardly practicable between business rivals. A series of hostilities ensued in the following year; a number of Englishmen were massacred by the Dutch at Amboyna, and sea-fights occurred between the vessels; the result being that the Dutch had it all their own way in a few years afterwards. The directors of the English Company even meditated winding up its affairs. Something similar happened more than once afterwards before they became a grand company and the real governors of India. The rise of British power there is one of those surprising revolutions which never before occurred in history. The managers of a trading company in London first became the lords of a manor a dozen times the size of England, and controlled the destinies of kings and princes, engaging in war or peace as occasion seemed to demand. Think of the affairs of a great country settled in a counting-house! But at length the anomaly had to cease, and, as most readers will remember, the East India Company lost its powers and privileges in 1858,

and ceased to exist as a governing body. Retiring allowances were made to commanders and officers. It may be interesting to note that up to 1814 trade with India, so long a jealously-guarded monopoly with the Company, was thrown open to private competition, but that they retained the exclusive trade with China for a long period after that date.

A trifling digression may be allowed here, as it really bears on our subject. The East India Company was long a synonym for everything that was rich and powerful, and many of its civil servants visited or retired to England as opulent and independent men. The maritime branch of the service received a goodly slice of the pie; and some facts relating thereto recorded by Lindsay, the authority before quoted, himself long a great shipowner, will astonish and interest the reader. A commander's position in the H. E. I. Co.'s service was most assuredly worth having, for his salary was a very small part indeed of his receipts. The Company granted a number of "indulgences" to their naval officers, of which the following are only part. Ninety-seven tons of space were reserved for the commander and officers, of which the former of course took the lion's share, 56½ tons. They were permitted to import on the homeward voyage tea to the following extent:—9,336 lbs. for the commander, 1,228 lbs. for first mate, and the lower grades were each privileged in the same way, but to a smaller extent. The officers might bring in China-ware as a flooring for the tea-chests, the quantity of which might range from 20 to 40 tons, according to the size of the vessel. They were even allowed surplus tonnage, when it could be safely and conveniently carried. The commander received as his perquisite the passage-money paid by *all* private passengers, the cost of their provisions and wine being alone deducted. His table was luxuriously supplied, and he was allowed to import for his own use two butts of Madeira wine. The first mate had, among his extra allowances, and quite apart from the regular supply of provisions on board, 24 dozen of wine or beer, 2 firkins of butter, 1 cwt. of cheese, 1 cwt. of groceries, and 4 quarter casks of pickles for the voyage. Lindsay says, "So many were their privileges, and so numerous their perquisites, that during five India or China voyages a captain of one of the Company's ships ought to have realised sufficient capital to be independent for the rest of his life." He was, in effect, a merchant, doing business for himself while in the employ of a large mercantile concern, and his officers were the same on a smaller scale. The above writer considers that the direct and inevitable remuneration to a commander was from £3,000 to £5,000 per round voyage, out and home, but that with his privileges and perquisites it might and often did reach £8,000 to £10,000, or more. He mentions one instance which came within his own knowledge, where "the commander of one of the ships employed on the 'double voyage'—that is from London to India, thence to China, and thence back to London, where he had a large interest in the freight on cotton or other produce conveyed from India to China—realised no less than £30,000." And yet some of them were not satisfied, and the Company had to make laws and investigations concerning illicit trading and smuggling with the connivance of the Custom House officers. Some of the commanders had even put into ports for which they had no orders, to carry out their own purposes.

The internal economy of an East Indiaman was, as regards discipline and order, modelled for the most part upon that of a man-of-war, and carried more men, twice over, than does many a modern steamer double her tonnage. Thus, one of the finest vessels of

the Company, mentioned by Lindsay, was for a considerable period the *Earl of Balcarras*. She was of 1,417 tons, and had 130 souls on board. After the commander came six mates, a surgeon and assistant, six midshipmen, purser, boatswain, gunner, carpenter, master-at-arms, armourer, butcher, baker, poulterer, caulker, cooper, two stewards, two cooks, eight boatswains, gunner's, carpenter's, caulker's, and cooper's mates; six quartermasters, a sailmaker, seven servants for officers, and seventy-eight seamen. But we are wandering from our theme.

The reign of Elizabeth was a glorious epoch in the history of naval affairs, and great names crowd upon us. It is impossible to pass by that of Sir William Monson, who served his country for fifty years, through three reigns, and whose "Naval Tracts" are almost as valuable as were his services, illustrating as they do the condition of the navy and maritime affairs of the period, and abounding in the details of well-described exploits.

Monson was of a good Lincolnshire family, and at an early age entered Baliol College, Oxford, where he remained a couple of years, till the excitement of the war with Spain determined him to run away to sea, as he did not expect to get the consent of his parents. At this date, 1585, he was only sixteen years of age. "I put myself," says he, "into an action by sea, where there was in company of us two small ships, fitted for men-of-war, that authorised us by commission to seize upon the subjects of the King of Spain; then made I the sea my profession, being led to it by the wildness of my youth." He had not long to wait for adventure. "A strong and obstinate ship of Holland" was encountered, whose captain had the audacity not to strike his flag immediately, when required to do so. The Dutch vessel had an English pilot on board, through whom communication was held; and the master of the privateer, by a ruse of navigation, ordering his helmsman in a loud voice to port his helm, while in an undertone he instructed him to do just the reverse, nearly fouled the Dutchman, whose men got out oars and fenders to prevent the impending collision. "When we saw their people thus employed," says Monson,* "and not to have time to take arms, we suddenly boarded, entered, and took her by this stratagem." Monson, when an old man, used to chuckle over his boyish share in this exploit, and includes it among "stratagems to be used at sea" in his "Tracts."

But he was to have speedily a better opportunity of distinguishing himself. The privateer on which he served—for she was nothing more—encountered a large Biscayan ship off the Spanish coast, whose captain refused to strike. A few of the English crew, including Monson, managed to board her, when the sea suddenly rose, and this mere handful were left on the Spaniard's decks, while the privateer was compelled to ungrapple. The storm increased, and it was not possible to succour the little band, who fought for eleven hours, from eight o'clock in the evening to seven the next morning. The Spaniards attempted to blow up the deck which they maintained, but "were prevented by fire-pikes," and at last surrendered after a desperate contest. The decks were covered with the dead and dying. "I dare say," says the narrator of the event, "that in the whole time of the war there was not so rare a manner of fight, or so great a slaughter of men." Monson, who had now received his "baptism of fire" with a vengeance, determined that nothing

* "Monson's "Naval Tracts" in Churchill's "Collection." Most of the narrative to follow is taken from the same source.

should take him from his adopted profession, and it is presumable that his friends became reconciled to it, for we find him suddenly raised, at one step, from the grade of a volunteer to the rank of captain, although but eighteen years old! Family influence, doubtless, had something to do with it. Gentlemen captains, who were often brave men, but who knew little enough about naval affairs, were common in those days. Raleigh distinguishes them very distinctly from the "tarpauling captain," or mariner who had learned his profession from a youth up. Monson, however, as his writings prove, soon became an adept in navigation and all the arts of seamanship.

Passing over a voyage in which Monson was nearly shipwrecked, we come to 1589, when he accompanied the Earl of Cumberland in his expedition to the Azores. The crews were reduced to great distress from want of water, and while cruising among the islands, a grand spout was seen issuing apparently from one of their cliffs. Cumberland asked Monson to go with four men and find out whether it was available for their use. While they were rowing towards the land, a great whale, lying asleep on the water, was noted from the ship, and was mistaken for a rock, whereupon the vessel tacked about and put to sea, leaving Monson to his fate. (The original narrative does not explain whether the waterspout, noticed from the ship, had proceeded from the whale, before it fell asleep.) "I had no sooner," says Monson, "set my foot ashore, than it began to be dark with night and fog, and to blow, rain, thunder, and lighten in the cruellest manner that I have seen. There was no way for me to escape death but to put myself to the mercy of the sea; neither could I have any great hope of help in life, for the ship was out of sight, and there only appeared a light upon the shrouds to direct me." The narrative says that a countryman of Monson's on board prevailed upon his lordship (the Earl of Cumberland) to forbear sailing. This was, one would think, hardly necessary, as Monson was his second in command; but stress of weather will probably account for the vessel being driven some distance. They rowed and rowed, but lost all sight of the ship. At length, in despair, they fired their last charge of powder from a musket. The flash was seen through the fog, and they were saved. "We were preserved," says the narrative, "rather by miracle than any human act; and to make it the more strange we were no sooner risen from our seats, and ropes in our hands to enter the ship, but the boat sunk immediately." The subsequent sufferings of the crew from the continued want of water have rarely been equalled. "For sixteen days together," says Monson, "we never tasted a drop of drink, either of beer, wine, or water; and though we had plenty of beef and pork of a year's salting, yet did we forbear eating it, for making us the drier. Many drank salt water, and those that did died suddenly; and the last words they usually spoke were 'Drink, drink, drink!'" There were 500 men on board, and the mortality, though not expressly stated in numbers, is said to have been something fearful. At last they made the coast of Ireland, and obtained relief. So severely was Monson's health affected by this voyage, that he retired from the active pursuit of his profession for a year afterwards.

Again he joined the Earl of Cumberland in 1591 on an expedition directed against Spain, off the coasts of which he successfully took two caravels by one of the stratagems for which he was famous. He had boarded one from the ship's boat; he manned her with a part of his boat's crew, and rowed back to his ship. The Spaniards on the other caravel far in the distance thought that the first, her consort, had been dismissed, and so shortened sail to meet

her; and was consequently taken unawares by a mere handful of men. But Monson only wanted to obtain information as to the enemy, and let them both off. This act turned out fortunately for him; for shortly afterwards, being left in charge of a prize taken from the Dutch, he was attacked by the Spaniards in six galleys, the consequence being that he was taken prisoner, when he found that his recent conduct towards the caravels had been reported favourably, and he was treated with more courtesy than had been usual before. But he was to suffer a long captivity for all that. At the Tagus he would probably have escaped had



MONSON AT CADIZ.

not an unforeseen chance prevented. While the galleys were in the harbour, a Brazilian, master of a Dutch ship, chanced to come on board that on which Monson was confined, and, pitying his hard fate, offered to take him off on his vessel, if he could devise any plan which should not implicate himself. Monson gave out to the rest of the prisoners that, tired of his life, he intended to drown himself. His intention really was to drop quietly into the water, and if possible swim to the friendly bark. But just before he had made his arrangements, the galleys were ordered to sea, and when they returned the ship had sailed. It is probably fortunate for him that he did not make the attempt, as, had it been frustrated, he would have probably suffered death, as did an Italian a short time afterwards, who had been trying to raise a general conspiracy on board. His execution was effected in the most horrible

manner, his arms and legs being severally tied to the sterns of four galleys, which were rowed in four different directions, thus quartering him.

Monson was afterwards removed to the castle of Lisbon, from which an attempt on his part to escape was frustrated by the treachery of an English interpreter there, whom he had been forced to employ. Fortunately, the letter which he had entrusted to a page, who was to have conveyed it *in his boots* to Lord Burleigh, became so saturated and obliterated by rain, that nothing could be made of it, and the whole matter was allowed to pass. Not so, however, after he had helped a Portuguese to escape, who had been condemned to death. The latter, aided by Monson's skill, managed to pass the sentinels disguised as a soldier, and then lowering himself by a rope, effected his plans. The flight having been discovered, Monson was accused of having assisted him, and was taken before the judge. "But neither threats nor promises of liberty could induce him to confess. He pleaded that he was a prisoner of war, that he was subject to the law of honour and arms, and that it was lawful for him to seek his freedom: he urged the improbability of holding such intercourse as was imputed to him with one whose language he did not understand; and he concluded by cautioning them to be wary what violence they offered him, as he had friends in England, and was of a nation that could and would revenge his wrongs." The latter argument probably it was that carried the day; but until released—no doubt by exchange—he was closely guarded.

In 1593, Monson again joined Cumberland, and considering the fidelity which he had always shown to that admiral, the latter seems to have treated him very badly. In the course of their voyage, a dozen Spanish hulks laden with powder were taken, half of which were left to Monson to haul over, while his admiral put to sea with the rest. Monson had with him only about fifty men. What was his surprise towards night to find that Cumberland had released the hulks which he had taken, and that they were crowding on all sail to join their consorts in his charge, with hostile intent, which it would be madness on his part to attempt to frustrate. He barely escaped; when the enemy boarded him on one side of his vessel, he leaped into the long boat on the other side, receiving a wound which remained all his days. Southey certainly puts it mildly when he says, "The conduct of the Earl of Cumberland in this affair admits of no reasonable or satisfactory explanations," for it looks far more like downright treachery. A couple of years afterwards, the Earl very plainly declared his colours by first inducing him to join him in his voyage, and then superseding him. Monson could not brook this, and returned, after some adventures, to England, where we soon find him with the Earl of Essex, in the expedition to Cadiz. At that most remarkable siege, he was in the thick of the fight ashore with Essex, where he received a shot through his scarf and breeches; another shot took away the handle and pommel of his sword, while he remained uninjured. But his principal services were in connection with the destruction of the fleet, which meant a loss of six or seven millions sterling to Spain. "The King of Spain," says Monson, "never received so great an overthrow, and so great an indignity at our hands as this; for our attempt was at his own home, in his own ports, that he thought as safe as his chamber, where we took and destroyed his ships of war, burnt and consumed the wealth of his merchants, sacked his city, ransomed his subjects, and entered his country without impeachment." Monson was knighted for his conduct at this siege.

The abundant "pluck" possessed by Monson is illustrated in the following example.

In 1597, on the island expedition, Monson's ship was separated some distance from the admiral's squadron, when a fleet of twenty-five sail was noted approaching in the dead of the night. Not being able to distinguish their flag, he determined to reconnoitre for himself, before signalling to the English ships. He approached them in his boat, hailing them in Spanish, and they, replying that they were of that nationality, asked whence he came. He replied that he was of England, and told them that his ship, then in sight, was a royal galleon, and could be easily taken, his object being to make them pursue him, so that he might gradually lead them into the wake of the squadron. All he got for this impudently gallant attempt was a volley of bad language and another of shot.

But all Monson's exploits pale before an action which occurred in Cerimbra roads, in which a great treasure-ship was cut out, in sight of a fortress and eleven galleys, and within hearing of the guns of Lisbon. He was then associated with Admiral Sir Richard Lewson, but the principal part of the service was performed by himself. When the carrack and galleys were discovered lying at anchor, a council was held on board the admiral's vessel, which occupied the better part of a day, as many of the captains thought it folly to attempt to capture a great ship defended by a fortress and eleven galleys. Monson thought differently, and it was at length agreed that he and the admiral should anchor as near the carrack as they could, while the other and smaller vessels should ply up and down, holding themselves in readiness for any emergency. It is likely, as Southey remarks, that "the sight of these galleys reminded Sir William of the slavery he had endured at Lisbon in similar vessels, if not indeed in some of these identical craft, and he longed to take revenge upon them." Monson says that in order to show contempt of them, he separated from the rest of the fleet, by way of challenging and defying them. "The Marquis of St. Cruz, General of the Portuguese, and Frederick Spinola, General of the galleys, accepted the invitation, and put out with the intention of fighting him; but they were diverted from their purpose by a renegade Englishman, who knew the force of the vice-admiral's ship, and that she was commanded by Monson."

The town of Cerimbra lies at the bottom of a roadstead, which usually affords protection for shipping. It had at that time a strong fortress close to the beach, and a fortified castle, while there was a troop of soldiers ashore, whose numerous tents lined the coast. The galleys were partly covered or flanked by a neck of rock, and the batteries could play over them, thus affording them great protection, while they could themselves keep up a continuous fire at any approaching vessel. Again, Monson tells us, "there was no man but imagined that most of the carrack's lading was ashore, and that they would hale her aground under the castle where no ship of ours would be able to come at her—all which objections, with many more, were alleged, yet they little prevailed. Procrastination was perilous, and therefore, with all expedition, they thought convenient to charge the town, the fort, the galleys, and carrack, all at one instant." This was done next morning, although a gale sprung up about the time of the attack. The admiral weighed, fired the signal gun, hoisted his flag, and was the first at the attack; "after him followed the rest of the ships, showing great valour, and gaining great honour. The last of all was Monson himself, who, entering into the fight, still strove to get up as near the shore as he could, where he came to an anchor, continually fighting with the town, the fort, the galleys, and the carrack

all together; for he brought them betwixt him, that he might play both his broadsides upon them. The galleys still kept their prows towards him. The slaves offered to forsake them . . . and everything was in confusion amongst them; and thus they fought till five of the clock in the afternoon." Monson's stratagems and rapidity of action paralysed the commanders of the galleys, and the men rowed about wildly to avoid him, not knowing what to do. The admiral came on board his ship, and, embracing him in the presence of the ship's company, declared that "he had won his heart for ever."

And so the battle raged till the enemy showed such evident signs of weakness, that it was proposed to board the carrack. Here, however, the admiral interposed, as he wished to preserve the treasure on board. The ships were ordered to cease firing, and one Captain Sewell, who had been four years a prisoner on the galleys, from one of which he had only just escaped by swimming, was selected to parley with them. He was to promise honourable conditions, but insist that as the English held the roadstead, as several of the galleys were *hors de combat*, and the castle powerless, they must expect the worst in a case of refusal. The captain of the carrack would not treat with an officer who had so recently been a slave in their power, but sent a deputation of Portuguese gentlemen of quality, desiring that they should be met by those of similar rank in the English service. They were, of course, properly received, but having delivered their message, evinced a great desire to hasten back; they revealed the real state of affairs by admitting that it was a moot question on the carrack whether the parley ought to be entertained, or the vessel set on fire. Monson's promptitude once more saved the situation. Not waiting to hear any more, or receiving any instruction from Admiral Lewson, he ordered his men to row him to the carrack. Several officers on board recognised him, and the commander, Don Diego Lobo, a young man of family, motioning his men apart, received him courteously. After some little palaver, Monson informing Don Diego of the rank he held in the expedition, and assuring him of his high regard for the Portuguese nation, the real business of their interview was approached. Diego asked that he, his officers and men, should be put on shore that night; that the ship and its ordnance should be respected, and its flags remain suspended; the treasure he would concede to the victors. Monson agreed to the first proposition, excepting only that he required a certain number of hostages whom he would detain three days, but laughed at the idea of separating the ship and its contents; and stated that "he was resolved never to permit a Spanish flag to be worn in the presence of the Queen's ships, unless it were disgracefully over the poop." A long discussion followed, and Monson, who was determined to have his way, made a show of descending to his boat. His firmness won the day, and all his demands were eventually conceded, after which he conducted Don Diego and eight gentlemen on board his ship, "when they supped, had a variety of music, and spent the night in great jollity." This is Monson's account; it is doubtful whether the Portuguese were thoroughly enjoying themselves under the circumstances! When next day Sir William accompanied them on shore, he found the Count de Vidigueira at the head of a force numbering 20,000 men, whose services were not of much account now. The disgust ashore at the comparatively easy victory attained by the English may be imagined. Besides the capture of the carrack, two of the galleys were burnt and sunk; the captain of another was taken prisoner, and the others fled during the engagement, although they were afterwards shamed into returning by

the heroic behaviour of Spinola, who defended the carrack against desperate odds. The total loss of life in the town, castle, and vessels, although never accurately known, must have been immense, while the victory was purchased by the English with the loss of only six men, scarcely a larger number being wounded.



ACTION IN CERIMBRA ROADS.

The carrack, named the *St. Valentine*, was a vessel of 1,700 tons burthen; she had wintered at Mozambique on her return from the Indies, where a fatal malady killed the bulk of her crew; indeed, it is stated that out of more than 600 men scarce twenty survived the whole voyage. The Viceroy of Portugal sent the galleys before named to protect her, and put on board 400 volunteers. The value of this prize was close on £200,000. It is just to Monson to state that he offered Diego "permission to take out of her whatever portion of the freight he could conscientiously claim as his own." This proposal the proud young commander

declined. His life afterwards was a series of misfortunes. He was thrown into prison for losing the carrack; escaped from captivity only to languish an exile in Italy; and at last died just as fortune once more seemed to smile upon him by offering him a chance in his own king's service.

On the accession of James I. a general peace ensued so far as England was concerned. All in all, the rest was beneficial to the navy, and many defects were remedied and reforms inaugurated. In one of the earliest reports presented to the king on the condition of the navy, after enumerating certain pressing needs, we find the estimate for its *annual* expenditure placed at rather less than £21,000—an amount which a single ironclad would have swallowed up entirely, and got considerably into debt. James caused one fine vessel to be constructed, in 1610, in which every improvement known at the time was introduced. She was christened the *Prince Royal*. Stow describes her as follows:—"This year the king builded a most goodly ship for warre, the keel whereof was 114 feet in length, and the cross beam was forty-four feet in length; she will carry sixty-four pieces of ordnance, and is of the burthen of 1,400 tons. This royal ship is double built, and is most sumptuously adorned, within and without, with all manner of curious carving, painting, and rich gilding, being in all respects the greatest and goodliest ship that ever was builded in England; and this glorious ship the king gave to his son Henry, Prince of Wales; and the 24th September, the king, the queen, the Prince of Wales, the Duke of York, and the Lady Elizabeth, with many great lords, went unto Woolwich to see it launched; but because of the narrowness of the dock it could not then be launched; whereupon the prince came the next morning by three o'clock, and then at the launching thereof the prince named it after his own dignity, and called it the *Prince*." Phineas Pett, one of a family of leading naval constructors of those days, was its builder. A well-known authority* says, "Were the absurd profusion of ornament with which the *Royal Prince* is decorated removed, its contour or general appearance would not so materially differ from the modern vessel of the same size as to render it an uncommon sight, or a ship in which mariners would hesitate at proceeding to sea in, on account of any glaring defects in its form, that in their opinion might render it unsafe to undertake a common voyage in." A very large number of superior vessels were added to the royal navy during this epoch, but the commercial marine was in a bad way until late in James's reign. What its conviction was at this time may be gathered from the fact that in 1615, half way in the reign, there were not more than ten vessels of 200 tons burthen each in the port of London. Less than seven years afterwards, such was the improvement, that Newcastle alone could boast more than a hundred, each of which exceeded that tonnage.

During this peaceful epoch Monson had to fulfil an unthankful office as guardian of the narrow seas, *i.e.*, the English and Irish Channels, and adjacent waters. He had to transport princes and ambassadors while war was going on, and as it would seem from a paper included in his "Tracts," at his own expense. This document runs at a first glimpse very curiously. Take one entry, "1604, August 4. The constable of Castile at his coming over, 200 (followers) 3 (meals)." An unconscionable number of followers and very

* Charnock, "History of Naval Architecture."

few meals, it would seem, for so many; but it doubtless means three meals apiece on the passage from Calais or Dunkirk to Dover. The retinue of "followers" sometimes aggregated as many as 300. During this period, however, Monson made some careful notes on the Dutch fisheries, then a most important source of revenue to that nation, while ours were almost entirely overlooked. Nine thousand Dutch vessels were kept in constant employment by these fisheries, a considerable proportion of which were on our own coasts, and conducted under our very noses. He was employed at intervals for two years in combating similar encroachments on the part of French fishermen. "The adventurous spirit of the age," says Southey, "was averse to an employment so tranquil and so near home." Men would rather seek the uttermost parts of the earth in a vain search for wealth than settle down to a certain, safe, and profitable employment. Monson waxes eloquently indignant on the subject in one of his chapters. "My meaning is," he says, "not to leave our fruitful soil untilled, our seas unfrequented, our islands unpeopled, or to seek remote and strange countries disinhabited, and uncivil Indians untamed, where nothing appears to us but earth, wood, and water, at our first arrival; for all other hope must depend on our labour and costly expenses, on the adventures of the sea, on the honesty of undertakers; and all these at last produce nothing but tobacco*—a new-invented useless weed, as too much use and custom make it apparent. * * * * You shall be made to know, that though you be born on an island seated in the ocean, frequented by invisible fish, swimming from one shore to the other, yet your experience has not taught you the benefits and blessings arising from that fish. I doubt not but to give you that light therein, that you shall confess yourselves blinded, and be willing to blow from you the foul mist that has been an impediment to your sight; you shall be awakened from your drowsy sleep, and rouse yourselves to follow this best business that ever was presented to England, or king thereof; nay, I will be bold to say, to any state in the world. I will not except the discoveries of the West Indies by Columbus; an act of greatest renown, of greatest profit, and that has been of greatest consequence to the Spanish nation." Exaggerated as all this may appear, Monson was right in his estimation of the profitable nature of the business. At that time the Dutch used to vend their fish in every European market, and obtain in exchange the productions of all countries. Monson also remarks on the carelessness of the English at that time in regard to lobsters, oysters, and lampreys, all of which the Dutch obtained from our coasts. In order to encourage the fisheries an Act had been passed prohibiting butchers from killing meat in Lent, and Monson wished it to be made compulsory on the rural population to consume fish. "Neither," says he, "will it seem a thing unreasonable to enjoin every yeoman and farmer within the kingdom to take a barrel of fish for their own spending, considering they save the value thereof in other victuals; and that it is no more than the fisherman will do to them to take off their wheat, malt, butter, and cheese for their food to sea." This agitation did good in calling attention to a neglected industry. The great enemies of the fishermen then were the pirates who infested the coasts, and who, if they ran short of provisions, looked upon them as their natural providers, rarely,

* This contemptuous allusion refers of course to the tobacco brought from the newly-formed plantations in Virginia.

if ever, paying for what they took. And before passing to other subjects, let us accompany Monson—on paper—on a little expedition he took against some of the said pirates.

So considerable an amount of alarm had been caused by piratical adventurers on the coasts of Scotland, that King James was in 1614 urgently requested to send some royal ships there. Sir William Monson and Sir Francis Howard were despatched at once, and after calling at Leith to obtain information and also the service of pilots, proceeded to the Orkney Islands. Touching at Sinclair Castle, the residence of the Earl of Caithness, situate on "the utmost promontory" of Britain, they learned that the accounts had been much exaggerated. There were only two known to the Earl, and indeed one of them whom Monson took could hardly be deemed such at all; he was a common sailor, and when he had found out the nature of the service to which he had been engaged, he had abandoned it as soon as possible. Clarke, the other adventurer, to whom the title of pirate more fairly belonged, had been ashore to the castle a day previously, and had been entertained in a friendly way, the fact being that the Earl and his tenants were a little afraid of him as an ugly customer. Hearing that Sir William was on the coast, he had fled: Monson, therefore, finding it useless and needless to remain at Caithness, sailed for Orkney, where he left Sir Francis Howard while he proceeded to explore the coasts in detail, putting into every inlet where it was likely Clarke or other pirates might be hidden. He was unsuccessful in his search, and at length decided to make for Broad Haven—a noted rendezvous for pirates—partly on account of its remoteness and inaccessibility, and partly because one Cormat dwelt there, who, with his daughters, entertained these thieving adventurers with great cordiality. On the voyage he encountered a terrible gale, "that it were fit only for a poet to describe." One of his vessels was engulfed in the seas, and no traces of it or of its crew remained, while the others were dispersed and did not see each other again till all met in England. Monson had now alone to beard the lion in his den.

Arrived at Broad Haven, which he describes as "the well-head of all pirates," he made good use of the half-pirate he had secured, the only person on board who knew anything of that den of sea-thieves. This man, with some others of the crew who had had some experience in piratical pursuits before, were sent to Cormat, "the gentleman of the place," with a well concocted story. Monson was described, for the nonce, as one Captain Manwaring, a grand sea-rover, liberal to all he liked, and whose ship was full of wealth. "To give a greater appearance of truth to all this, the crafty messenger used the names of several pirates of his acquaintance, and feigned messages to the women from their sweethearts, making them believe that he had tokens from them on board. The hope of wealth and reward set the hearts of the whole family on fire; and the women were so overjoyed by the love tales and presents, that no suspicion of deceit entered into their minds." Cormat proffered his services, and recounted how many pirates he had assisted, at great peril to himself; he further volunteered to send two "gentlemen of trust" on board next day, as hostages for his sincerity. He recommended that some of them should come ashore next day, armed, and kill some of the neighbours' cattle; this was intended doubtless to frighten the poor settlers round, so that he himself might derive all the benefit of Manwaring's visit. Next morning the farce began, the first part of the programme being followed as Cormat had directed; Captain Chester, with fifty men, was despatched ashore by

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MONSON AT BROAD HAVEN.

Monson; some cattle were killed, and the pseudo-pirates, swaggering and rollicking, were invited to Cormat's house, where they received a riotous welcome. Cormat's two ambassadors went on board Monson's vessel, and delivered a friendly message. When they had delivered it, Sir William desired them to observe everything around them carefully, and to tell him whether they thought that ship and company were pirates. It was idle to dissemble any longer, especially as these men could not, if they would, betray Sir William's design. He accordingly reproached them for their transgressions, told them to prepare for death, and ordered them to be put in irons, taking care that neither boat nor man should be allowed to go on shore until he was ready to land. When he at length went ashore to visit Cormat, four or five hundred people had assembled on the beach to receive the famous "Captain Manwaring." He pretended to be doubtful of their intentions, when they redoubled their protestations of friendship, three of the principal men running into the water up to their arm-pits, striving who should have the honour of carrying him ashore. One of these was an Irish merchant, who did a thriving trade with the pirates; another was a schoolmaster; and the third was an Englishman, who had formerly been a tradesman in London. These gentry conducted Sir William to Cormat's house amidst huzzas and shouts of welcome, everybody seeking to ingratiate himself with the supposed pirate. "'Happy was he,' says Monson, 'to whom he would lend his ear.' Falling into discourse, one told him they knew his friends, and though his name had not discovered it, yet his face did show him to be a Manwaring." In short, they made him believe he might command them and their country, and that no man ever was so welcome as Captain Manwaring. At the house a scene of revelry ensued; the harper played merrily for the company, who danced on the floor, which had been newly strewn with rushes for the occasion. The women made endless inquiries for their distant lovers, and no suspicion seems to have crossed the minds of any in regard to the fate of the two ambassadors, who were supposed to be enjoying themselves with the sailors on board. In the height of the festivities, the Englishman was particularly communicative; showed Sir William a pass for the interior which he had obtained by false pretences from the sheriff, authorising him to travel from Clare to make inquisition for goods supposed to have been lost at sea, and which enabled him to journey and sell his plunder without suspicion. He even proffered the services of ten mariners who were hiding in the neighbourhood, and Monson, of course, pretended heartily to accept their services, promising a reward. He asked the man to write them a letter, which at once he did as follows:—"Honest brother Dick and the rest, we are all made men, for valiant Captain Manwaring and all his gallant crew are arrived in this place. Make haste, for he flourisheth in wealth, and is most kind to all men. Farewell, and once again make haste." Monson took charge of the letter, and would, doubtless, have used it, had not the approach of night obliged him to bring about the *denouement* of this play. The comedy was all at once to change into a tragedy.

In the midst of their riotous mirth, he suddenly desired the harper to cease, and in serious and solemn tones commanded silence. He told them that, hitherto, "they had played their part, and he had no share in the comedy; but though his was last, and might be termed the epilogue, yet it would prove more tragical than theirs." He undeceived them as to his being a pirate, and declared his real business was to punish and suppress all such, whom his

Majesty did not think worthy the name of subjects. "There now remained nothing but to proceed to their executions, by virtue of his commission; for which purpose he had brought a gallows ready framed, which he caused to be set up, intending to begin the mournful dance with the two men they thought had been merry-making aboard the ship. As to the Englishman, he should come next, because being an Englishman his offence did surpass the rest. He told the schoolmaster he was a fit tutor for the children of the devil, and that as members are governed by the head, the way to make his members sound was to shorten him by the head, and therefore willed him to admonish his scholars from the top of the gallows, which should be a pulpit prepared for him. He condemned the merchant as a receiver of stolen goods, and worse than the thief himself; reminding him that his time was not long, and hoping that he might make his account with God, and that he might be found a good merchant and factor to Him, though he had been a malefactor to the law." One can imagine the change which came over the assembly; all their high spirits were quenched in a minute, while the principals abandoned themselves to despair, believing that their hour was at hand. When Sir William left them to go aboard, the carpenter was still hammering away at the gallows.

Next morning the prisoners were brought out to meet their doom, and were kept waiting in an agony of terror, while the people generally were suing for their lives, and promising that they would never assist or connive at pirates again. Sir William had never really the intention to hang any of them, and "after four-and-twenty hours' fright in irons he pardoned them;" the Englishman being the only one who suffered any actual punishment. He was banished from the coast, and the sheriff was admonished to be more careful in granting passes for the future.

The very next day, while still at Broad Haven, Sir William nearly captured a pirate who was entering the harbour, when the latter took alarm at seeing a strange vessel, and stood off to sea, where he remained six days in foul weather. A day later the pirate anchored at an island near Broad Haven, and contrived to forward a letter to Cormat, who having just escaped one danger, did not desire to risk his neck again; he accordingly showed the letter to Monson. It ran as follows:—"Dear Friend, I was bearing into Broad Haven to give you corn for ballast, but I was frightened by the king's ship I supposed to be there. I pray you send me word what ship it is, for we stand in great fear. I pray you, provide me two kine, for we are in great want of victuals; whensoever you shall make a fire on shore, I will send my boat to you." This just suited Monson, who had a particular aptitude for stratagem. He directed Cormat to answer his request in the affirmative. "He bid him be confident this ship could not endanger him; for she was not the king's, as he imagined, but one of London that came from the Indies with her men sick, and many dead. He promised him two oxen and a calf; to observe his directions by making a fire; and gave him hope to see him within two nights." A few of the ship's company, disguised in Irish costumes of the period, were sent to accompany the messenger, with instructions to remain in ambush. The hungry pirates were keeping a sharp look out for the beacon fire, and it was no sooner lighted, than they hastily rowed ashore, and received the letter, which gave them great satisfaction. Sir William meanwhile was quietly laying plans for their capture. Guided by the Irish peasantry, he took a number of his company a roundabout trip by land

and water till he brought them suddenly upon the place where the fire was made, and the pirates were taken so unawares that they yielded without an effort to escape. The whole gang was seized and taken to Broad Haven, where the captain was hanged as an example to the rest. Monson so completely cleared the coast of pirates, and frightened those who had aided them, that on his way home, "groping along the coast," he could not obtain a pilot. Monson's active career, although it extended to the reign of Charles I., was now nearly over.

CHAPTER II.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

Charles I. and Ship Money—Improvements made by him in the Navy—His great Ship, the *Royal Sovereign*—The Navigation Laws of Cromwell—Consequent War with the Dutch—Capture of Grand Spanish Prizes—Charles II. seizes 130 Dutch Ships—Van Tromp and the Action at Harwich—De Ruyter in the Medway and Thames—Peace—War with France—La Hogue—Peter the Great and his Naval Studies—Visit to Sardam—Difficulty of remaining *incognito*—Cooks his own Food—His Assiduity and Earnestness—A kind-hearted Barbarian—Gives a Grand Banquet and *Fête*—Conveyed to England—His Stay at Evelyn's Place—Studies at Deptford—Visits Palaces and Public Houses—His Intemperance—Presents the King a £10,000 Ruby—Engages numbers of English Mechanics—Return to Russia—Rapid increase in his Navy—Determines to Build St. Petersburg—Arrivals of the First Merchantmen—Splendid Treatment of their Captains—Law's Mississippi Scheme and the South Sea Bubble—Two Nations gone Mad—The "Bubble" to Pay the National Debt—Its one Solitary Ship—Noble and Plebeian Stockbrokers—Rise and Fall of the Bubble—Directors made to Disgorge.

CHARLES I., as we all know, had a fatal amount of belief in the royal prerogative. One of his first acts, after ascending the throne, was to assume the direct government of Virginia, and not only to treat the charter of the company as annulled, "but broadly declared that colonies founded by adventurers, or occupied by British subjects, were essentially part and parcel of the dominion of the mother country." The Virginia Company vainly complained that they had expended a fifth of a million sterling over the undertaking; their territory was appropriated to the Crown, as were shortly afterwards North and South Carolina, Georgia, Tennessee, and part of Louisiana. But these arbitrary acts were as nothing to the ship-money tax. There was some precedent for it. "The ancient princes of England, as they called on the inhabitants of the counties near Scotland to arm and array themselves for the defence of the border, had sometimes called on the maritime counties to furnish ships for the defence of the coast. In the room of ships, money had sometimes been accepted. This old practice it was now determined, after a long interval, not only to revive but to extend. Former princes had raised ship-money only in time of war; it was now exacted in a time of profound peace. Former princes, even in the most perilous wars, had raised ship-money only along the coasts; it was now exacted from the inland shires. Former princes had raised ship-money only for the maritime defence of the country; it was now exacted, by the admission of the Royalists themselves, with the object, not of maintaining a navy, but of furnishing the king with supplies which might be increased at his discretion to any amount, and expended at his discretion for any purpose."* The resistance which followed, and which

* Macaulay: "History of England."

assisted the unfortunate monarch to his downfall, is too well known to need recapitulation here. Worthy Monson, who, although bluff and hearty enough as a sailor, was something of a courtier, defended the levy of the obnoxious tax. But then he believed that Charles really wanted the money for the navy alone, and for retaliation upon the Dutch, while the nation at large had not much faith in their king, or in the alleged purposes for which the tax was to be levied. This is not the place for any defence, partial or otherwise, of Charles's policy. He did, however, show a considerable amount of energy in his attempts to improve the navy, and constructed one vessel, the *Sovereign of the Seas*, or *Royal Sovereign*, which was in every respect an advance on anything built before it. One Thomas Heywood wrote a very learned and flowery tract concerning it. "There is one thing" says he, "above all things for the world to take special notice of, that shee is beside tonnage so many tons in burden, as their have beene yeares since our blessed Saviour's incarnation, namely, 1637, and not one under or over; a most happy omen, which, though it was not the first projected or intended, is now by true computation found so to happen." A description of her ornamentation would occupy several pages of this work; gold and black were the colours alone employed. She was 232 feet long, had three flush decks, besides quarter-deck and raised forecastle. "Her lower tyre" had thirty ports; her middle tier the same; and the third, twenty-six ports for guns. Her forecastle, half-deck, stern, and bows were all pierced for heavy guns—that is, heavy for those days. On the stern was painted a Latin inscription, thus "Englisht," as Heywood puts it:—

"He who seas, windes, and navies doth protect,
Great Charles, thy great ship in her course direct!"

She was built of the best oak, and no more seaworthy ship had ever been turned out from Woolwich previously. The *Royal Prince*, built only nineteen years before, seems to have been a mere holiday ship, and was at the above-mentioned date laid up; the *Royal Sovereign* was in active service for nearly sixty years, and would have been rebuilt but for an untoward accident. The history and fate of this fine ship are thus briefly described by a descendant of the architect, Phineas Pett, writing in January, 1696:—

"The *Royal Sovereign* was the first great ship that was ever built in England; she was then designed only for splendour and magnificence, and was in some measure the occasion of those loud complaints against ship-money in the reign of Charles I.; but being taken down a deck lower, she became one of the best men-of-war in the world, and so formidable to her enemies that none of the most daring among them would willingly lie by her side. She had been in almost all the great engagements that had been fought between France and Holland; and in the last fight between the English and the French, encountering the *Wonder of the World*, she so warmly plied the French Admiral, that she forced him out of his three-decked wooden castle, and chasing the *Royal Sun* before her, forced her to fly for shelter among the rocks, where she became a prey to lesser vessels, that reduced her to ashes. At length, leaky and defective herself with age, she was laid up at Chatham to be rebuilt; but being set on fire by negligence, she was, on the 27th of this month, devoured by the element which so long and so often before she had imperiously made use of as the instrument of destruction to others."

Charles, in spite of his troubles, either rebuilt or added eighteen vessels to the Royal Navy, leaving it not merely numerically stronger, but improved in all other particulars. The immense square sterns and full bows originally copied from the Dutch (who built their ships apparently on their own model) gave place to more shapely sterns and sharper bows. Extremely high poops and forecastles—copied, one would think, from the Chinese—were abandoned as increasing the dangers of seamanship. Tonnage and number of guns were largely increased. A “first rate” advanced from fifty to sixty, and afterwards to a hundred guns.

Holland, during the reigns of James I. and Charles I., had been carrying off all the commercial honours from England, and it was becoming evident that prohibitory laws were needed to stop their triumphant progress on the sea. In 1646, and again in 1650, two Acts were passed, both having the same tendency, to prevent foreign ships trading with England’s new plantations in Virginia, Bermuda, Barbadoes, “and other places in America.”* On the 9th of October, 1651, the celebrated Navigation Act of Cromwell came into operation. There were no half measures in that Act. It declared that no goods or commodities whatever of the growth, production, or manufacture of Asia, Africa, or America, should be imported either into Great Britain or Ireland, or any of the colonies, except in *British-built ships, owned by British subjects, and of which the master and three-fourths of the crew belonged to that country.* This, literally translated, meant that England wanted the carrying trade of everything that concerned her own well being. The next enactment went further. It provided that no goods of the growth, production, or manufacture of any country in Europe should be imported into Great Britain except in British ships, owned and navigated by British subjects, “*or in such ships as were the real property of the people of the country or place in which the goods were produced, or from which they could only be, or most usually were, exported.*” This provision was aimed at the Dutch; they had little to export. But unless one can understand the long-stifled animosity and jealousy felt in England regarding their commercial supremacy on the seas, and as regards the carrying trade, he can hardly understand why laws, which would nowadays be considered ridiculous and unjust, were so popular then. So strong had these feelings become, that when the Dutch despatched an embassy to England for the purpose of obtaining a revocation of the navigation laws, its members had to be guarded from the violence of the mob.

England had now unmistakably asserted her right to carry on her own over-sea trade in her own ships, and to enter the lists with any other nation as regards foreign trade. This action was a defiance hurled at Holland, and after a little manœuvring ended inevitably in war. A few facts only regarding that war may be permitted here. The Dutch were at first, and indeed for the most part, the sufferers. Within a month of its declaration, Blake captured 100 of their herring boats, and twelve of their frigates, sinking a thirteenth. In 1652–3 there were five actions. In the first Blake was successful; in the second he was thoroughly beaten by Martin Tromp (father of the Tromp best known in history). The third, early in 1653, resulted in a victory for the English, the Dutch losing 300 merchantmen they had captured not long before; the fourth was a decided victory for England, and the

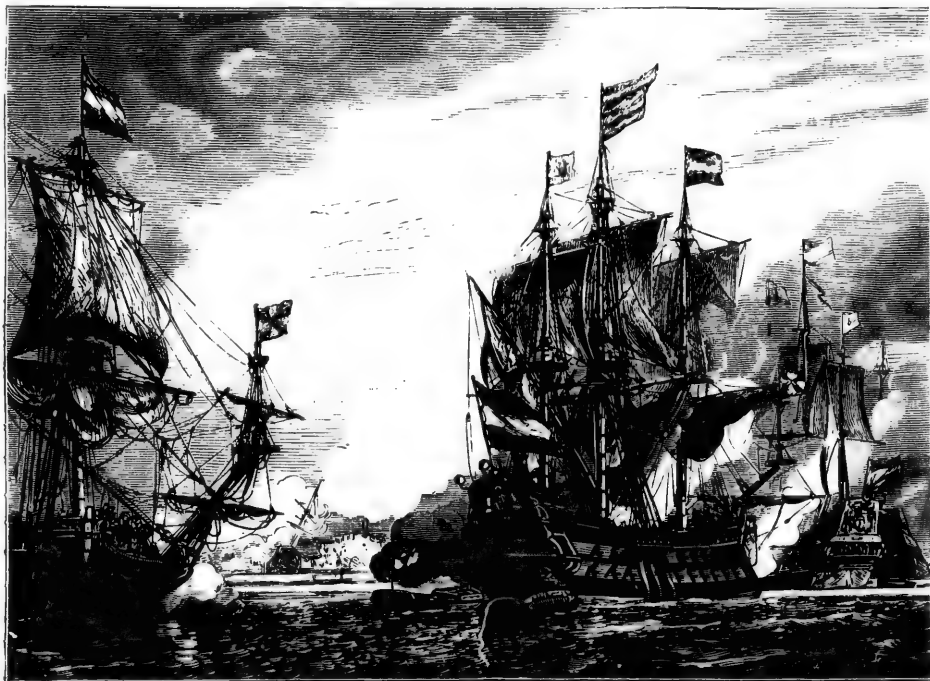
* The term “America” often included the West Indies, &c., at that period.

fifth was an indecisive action. The English, however, took possession of the Channel, and scarcely a day passed without Dutch prizes being brought into English ports. Many of the Dutch ships, returning from distant parts of the world, rounded Scotland, rather than pass up the Channel. On the fifth of April, 1654, a treaty of peace was concluded; Cromwell requiring, before it was signed, an admission of the English sovereignty of the seas, and the Dutch consenting to strike their flag to the ships of the Commonwealth.

One of the greatest maritime successes of the Protector's time was the capture of Spanish galleons worth, with their freight, £600,000. The fleet had been lying idly off Cadiz endeavouring to provoke the Spanish squadron to an engagement, or trusting to intercept their returning treasure ships. Captain Stayner in the *Speaker*, accompanied by the *Bridge-water* and *Plymouth*, left the English fleet temporarily with the intention of taking water on board in a neighbouring bay. On his course he luckily fell in with eight galleons from America. Such an opportunity warmed up the hitherto drooping spirits of the English sailors, and they fought with fury. In a few hours one of the galleons was sunk, a second burned, two ashore, and four taken prizes. They were loaded with plate, ore, and money. When the treasure reached London it was placed in open carts and ammunition wagons, and carried in triumph through the streets to the Tower, with a guard of only ten soldiers. This rather ostentatious display of confidence in the people proved an excellent move for Cromwell; nothing added more to his popularity among the lower classes. The Earl of Montague, who convoyed it home, but who in reality had nothing to do with its capture, was the subject of universal panegyrics and parliamentary thanks.

If Charles II. could have reversed any of Cromwell's legislative measures, he and his court would most assuredly have done so. But they were simply modified, and not to the advantage of the Dutch, who were very much irritated, but attempted to gain time. Charles, however, without waiting for a formal declaration of hostilities, seized 130 of their ships laden with wine and brandy, homeward bound from Bordeaux, which were taken into English ports, and condemned as lawful prizes, although such an act could not be justified by any law of nations. War was again declared in 1665, and an action occurred off Harwich, in which the celebrated Van Tromp was engaged. The Dutch lost nineteen ships, burnt or sunk, with probably 6,000 men; the English lost only four vessels, and about 1,500 men. Then came a coalition between the French and Dutch, and the great battle of June 1st, 1666, in which England lost two admirals, and twenty-three great ships, besides smaller vessels, 6,000 men, and 2,600 prisoners; and the Dutch four admirals, six ships, and 2,800 soldiers. The Dutch could fairly claim the victory here, but less than eight weeks later, July 24th, were thoroughly beaten, De Ruyter being driven into port, and a large number of merchant ships and two men-of-war being taken immediately afterwards. While negotiations were going on for peace next year, the Dutch, believing Charles to be trifling, despatched De Ruyter to the Thames. All London was in a panic. A strong chain had been thrown across the Medway, but the Dutch, with favourable wind and strong tide, broke through it, destroyed the fortifications of Sheerness, burnt royal and merchant ships, and pushed up the river as far as Upnor Castle, near Chatham. It was even feared that the fleet would sail up to London Bridge, and to prevent it, thirteen ships were sunk in the river at Woolwich, and four at Blackwall. Numerous platforms furnished with artillery were

hastily prepared at various points. After committing all the damage that he could in the Thames, De Ruyter sailed for Portsmouth, intending to cause similar havoc, but finding the fleet well prepared, he passed down the Channel and captured several vessels at Torbay. Thence turning back, he hovered about hither and thither, keeping the coast in continual alarm until the treaty of peace was signed in the following summer. By its provisions each nation retained the goods and prizes it had captured, while all ships of war and merchant vessels belonging to the United Provinces meeting our men-of-war in British



DE RUYTER ON THE MEDWAY.

waters, were required to "strike the flag and lower the sail as had been formerly practised." From this date the merchant navy of England steadily increased, and London became that which Amsterdam had been, the mart of nations, the chief emporium of the commercial world. In spite of De Ruyter, England had therefore greatly gained by this war.

And now France sought to pluck from England the laurels she had won from the Dutch. Her naval force had become formidable, and augmented by privateers, played havoc with our merchant vessels. By the destruction or capture of nearly the whole of our Smyrna fleet, with two English ships of war convoying them, and other captures, it was estimated that the loss to England was a million sterling. But May 12th, 1692, brought its revenge. On that day the memorable battle of La Hogue was fought, and the French lost nearly the whole of their navy to us.

From 1688 to the death of Queen Anne, the trade of the American plantations had steadily and rapidly increased, till at the latter date it employed 500 vessels, a large proportion of which were engaged in the slave trade from Africa. It started as a monopoly in the hands of the African Company, incorporated at first under Act of Parliament as traders in gold and ivory, but soon developing into traffickers in human flesh. In 1698 an Act of Parliament gave permission to all the king's subjects, whether of England or America, to trade to Africa on payment of a certain percentage to the company on all goods exported or imported, negro slaves being, nevertheless, exempted from this tax. How great this



PETER THE GREAT.

inhuman and nefarious trade had developed may be gathered from the fact that the French, *in one year*, and to supply *one* island, that of St. Domingo, transported 20,000 slaves from Africa.

Passing rapidly over the pages of history, we come to an important epoch in the progress of merchant shipping, when the trade to Russia was practically thrown open to our merchants by an Act "entitling any person to admission to the Russia Company upon payment of an entrance fee of five pounds." It was about this time that the Czar abdicated temporarily, and made a voyage to Holland and England, travelling *incognito*, or as much so as he could. Many popular accounts of Peter the Great's stay in these two countries are so full of errors that the present writer may be permitted to give, moderately in

detail, some account of them, derived from the best authorities.* They have a distinct bearing on our subject, not merely because one of Peter's leading objects was the study of ship-building and maritime affairs, but because his studies led to an immense increase in Russia's naval power. Previously, in fact, she could hardly be said to have had any at all.

In many published accounts the Czar is represented as a mere youth at the period of his visit to the dockyards of Holland and England. The fact is that he was twenty-five years of age, and had already served in two campaigns. Indeed, it may be said that the latter campaign, in which he conquered Azoff, partly by the assistance of foreigners and ships built by foreigners, was the means of opening his eyes to the superiority of the Western Europeans over his own barbarous subjects. Resolute, ambitious, and intelligent, he determined that his people should not remain half savages. Influenced by such motives, he dispatched, in 1697, sixty young Russians, selected out of the army, to Venice and Leghorn, under orders to make themselves instructed in everything pertaining to the arts of ship-building and navigation; forty more were sent to Holland for the same purpose, and his own voyage had largely the same object. "It was a thing," says Voltaire, unparalleled in history, either ancient or modern, for a sovereign of five-and-twenty years of age to withdraw from his kingdom for the sole purpose of learning the art of government." It happened that Peter was not as yet represented at any of the foreign courts, and he therefore appointed an embassy extraordinary to proceed, in the first instance, to the States-General of Holland, while he would accompany it simply in the character of an *attaché*. The three ambassadors were General Le Fort, a native of Geneva, who had been of immense service to the Czar, and was now his confidential friend; Alexis Golowin, Governor of Siberia; and Voristzin, Secretary of State for Foreign Affairs. With secretaries, *attachés*, pages, and guards, the retinue numbered 200 persons. Their passage through Germany was a grand carouse, and the hard drinking for which the Russians are still noted, was very much observed. At one of these bacchanalian debauches, the Czar, who was a hot-headed man, took such violent offence at something said by Le Fort, that he drew his sword and ordered him to defend himself. "Far be it from me," said Le Fort; "rather let me perish by the hand of my master." Peter had raised his arm, but one of the retinue dared to interfere, and caught hold of it. Peter's anger was of short duration; he displayed, says Voltaire, "*autant de regret de cet emportement passager qu'Alexandre en eut du meurtre de Clitus*," and immediately asked Le Fort's pardon, saying, "that his great desire was to reform his subjects, but he was ashamed to say he had not yet been able to reform himself."

Having reached Emmerich, the impetuous and youthful monarch left the embassy, and proceeded in a boat down the Rhine, not halting till he reached Amsterdam, "through which," says one authority, "he flew like lightning, and never once stopped till he arrived at Zardam,† fifteen days before the embassy reached Amsterdam." One of his small party

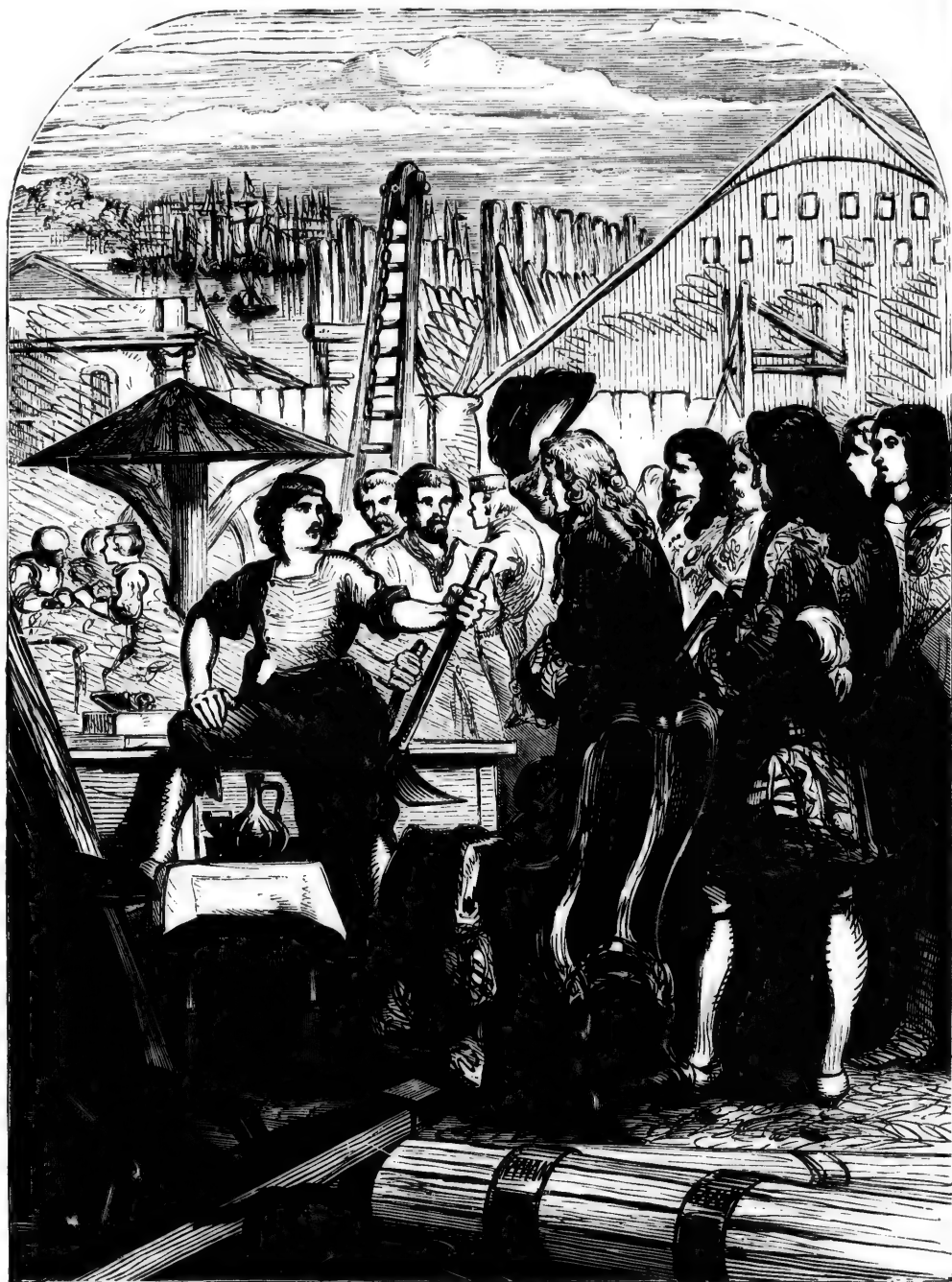
* The principal authorities are—"The History of Peter the Great, &c.," by Alexander Gordon, who was several years a major-general in the Russian service, and was son-in-law of the General Patrick Gordon who may be said to have once saved Russia to the Czar; "*Histoire de Pierre le Grand*," by Voltaire; and the "*Life of Peter the Great*," by John Barrow, F.R.S., &c. A modern French writer has given a catalogue of ninety-five authors of some little note who have treated of Peter's life.

† This name is spelled by the various authorities in many ways; sometimes it is Zaardam.

in the boat happened to recognise a man there who was fishing in a boat, as one Kist, who had worked for some time in Russia. He was called to them, and his astonishment may be conceived at seeing the Czar of all the Russias in a little boat, dressed like a Dutch skipper, in a red jacket and white trousers. Peter told Kist that he should like to lodge with him; the poor man did not know what to do, but finding the Czar in earnest procured him a cottage behind his own, consisting of two small rooms and a loft. Kist was instructed not to let any one know who the new lodger was. A crowd collected to stare at the strangers; and to the questions put to them, Peter used to answer in Dutch that they were all carpenters and labourers hard up for a job. But the crowd did not believe it, for the dresses of some of his companions belied the statement. The Czar, shortly after arriving at Zardam, paid visits to a number of the families of Dutch seamen and carpenters whom he was employing at Archangel and elsewhere, representing himself as a brother workman. Among others he called upon a poor widow, whose deceased husband had once been a skipper in his employ, and to whom he had some time before sent a present of 500 guilders. The poor woman begged him to tell the Czar how "she never could be sufficiently thankful" for his great kindness, little dreaming that the rough-looking young man before her was that monarch. He assured her that the Czar should most certainly be acquainted with her message. Peter proceeded to purchase a quantity of carpenter's tools, and his companions were ordered to clothe themselves in the common garb worn in the dockyards.

Next day was Sunday, and it became evident that some one had let the cat more or less out of the bag, for crowds of sailors and dock-hands assembled before Peter's lodgings, which annoyed him terribly. But the fact is that a Dutch resident of Archangel had written home to his friends, informing them of the projected voyage, and enclosing a portrait and description of the Czar. Among the crowd a garrulous barber, who believed he had recognised him, shouted out, "Dat is der Tzar!" and all poor Peter's little stratagems could not save him from the curiosity of the populace. A Hollander has left a description of him, which would indicate that he was too noticeable to be mistaken by any who had once seen him. He was very tall and robust, quick and nimble of foot, and dexterous and rapid in all his actions; his face was plump and round, fierce in his look, with brown eyebrows, and short curling hair of a brownish colour. His gait was quick, and he had a habit of swinging his arms violently, while he always carried a cane, which he occasionally used very freely over the shoulders of those who had offended him. "His extraordinary rapidity of movement in landing or embarking used to astonish and amuse the Dutch, who had never before witnessed such '*loopen, springen, en klauteren over der schepen*.'"

When the embassy entered Amsterdam formally, Peter took part in the procession, but only as a private gentleman in one of the last carriages, and he was not recognised. But little of his time was given to the ambassadors; it was almost entirely spent in the docks, among shipbuilders, and on the shipping, and in sailing about the Zuyder Zee and elsewhere, where he was accustomed to carry so much sail on his little boat as to alarm his companions for his safety. "His first exploit in the dockyard of Mynheer Calf, a wealthy merchant and shipbuilder, with whom he was prevailed on to lodge, after quitting his first cabin, was to purchase a small yacht, and to fit her with a new bowsprit, made



THE IMPERIAL WORKMAN RECEIVING A DEPUTATION.

entirely with his own hands, to the astonishment of all the shipwrights; they could not conceive how a person of his high rank could submit to work till the sweat ran down his face, or where he could have learned to handle the tools so dexterously." While in the dockyard he was entered in the books as a ship-carpenter, and conformed in every way to its regulations. He was known among the workman as Pieter Zimmerman, sometimes as Pieter Bass, or Master Peter. Dutch authorities speak of his simple habits; he was an early riser, lighted his own fire, and frequently cooked his own food while living in the cottage. When any one wished to speak to him, "he would go with his adze in his hand, and sit down on a rough log of timber for a short time, but seemed always anxious to resume and



OLD DOCKYARD AT DEPTFORD.

finish the work on which he had been employed." An English nobleman visited the yard, and asked the superintendent to point out the Czar to him unnoticed. This was done, and the superintendent, seeing that the Czar was resting for a moment, called out to him, "Pieter Zimmerman, why don't you assist those men?" Peter immediately got up and helped to shoulder the heavy log they were carrying. He would lend a helping hand at everything connected with ships, even rope and sail making, and smith's work. Once, at Müller's manufactory, at Istia, he forged several bars of iron, and put his own mark on them, making his companions blow the bellows and fetch the coals. The Czar insisted upon receiving the same payment as the other workmen, and bought a pair of shoes with the money, remarking "I have earned them well, by the sweat of my brow, with hammer and anvil." Peter finished his labours at ship-carpentering by assisting to put together a yacht, which, at the suggestion of one of the burgomasters, was to be presented to him as a *souvenir* of his visit to Holland. He

worked at it every day till it was finished, when he christened it the *Amsterdam*. His numerous investigations into science included surgery, and he carried his instruments about with him, ever ready to pull a tooth, or bleed, or even tap a patient for the dropsy. In short, his desire for practical knowledge was insatiable. Ten times a day, while accompanying his friend Calf and others about the ships, and yards, and factories, and mills, he would ask, "Wat is dat?" and being told, would answer, "Dat wil ik zien,"—"I shall see that." His companions were not half so earnest as their master, and after awhile they hired a large house, kept a professed cook, and enjoyed themselves in idleness.

While in Holland, the news arrived of a Russian victory over the Turks and Tartars, and the imperial workman received the congratulations of the Emperor of Germany, the Kings of Sweden, Denmark, and other countries. He celebrated the event by giving a grand entertainment to the principal officials and merchants of Amsterdam, their wives and daughters. "The sumptuous dinner was accompanied and followed by a band of music, and in the evening were plays, dancing, masquerades, illuminations, and fireworks. His respectable friend, Witsen, told him that he had entertained his countrymen like an emperor." And now, after nine months' hard work at Zardam, he had an interview with King William at the Hague, who arranged to transport him and his suite in one of the royal yachts, accompanied by two men-of-war.

No secret was made of the Czar's rank in London, although he tried to live as privately as possible. He was placed under the special charge of the Marquis of Carmarthen, and a great intimacy sprang up between them. A large house was hired for him and his suite at the bottom of York Buildings, where the marquis and he used to spend their evenings together frequently in drinking "hot pepper and brandy." But then a pint of brandy and a bottle of sherry was nothing uncommon as a morning draught for the Czar. After seeing all the sights of London, he paid visits to Chatham, Portsmouth, and elsewhere, but the larger part of his time was spent at Deptford, where he repaired to investigate and learn the higher branches of naval architecture and navigation. There is little or no evidence, popular tradition to the contrary notwithstanding, that he ever worked as a shipwright there,* or engaged in more laborious employment than rowing, or in sailing yachts and boats about the Thames. The writer has before him now one of the conventional pictures of "Peter at Deptford." It represents a smooth-faced youth of feminine appearance, and about sixteen years old at most, vigorously engaged, apparently, in doing damage to a ship's bulwarks with a gigantic hammer and formidable spike. The fact is that Peter was in his twenty-sixth year, had been the ruler of a great empire for several years, and was beyond his years in acquirements and earnestness; a man of strong passions, and sadly given to drink. Peter was glad to get out of town. Crowds gave him an amount of annoyance that was inexplicable to a Londoner; and he avoided, as much as he could, balls and assemblies and public gatherings for the same reason. Nor could he have desired a more pleasant and suitable place than that which was provided for him, the

* One account says, indeed, that he worked with his own hands as hard as any man in the yard. "If so," says Barrow, "it could only have been for a very short time, and probably for no other purpose than to show the builders that he knew how to handle the adze as well as themselves."

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celebrated Saye's Court, Evelyn's charming house and grounds* close to Deptford Dockyard, which had just become vacant by the removal of Admiral Benbow, who had been its tenant. A special doorway was broken through the boundary wall of the dockyard to facilitate communication for the Czar. Benbow had given poor Evelyn much dissatisfaction, but the new occupant was rather worse. His servant wrote to him, "There is a house full of people, right nasty. The Tzar lies next your study, and dines in the parlour next your



SAYE'S COURT, DEPTFORD.

study. He dines at ten o'clock, and six at night; is very seldom at home a whole night; very often in the king's yard, or by water, dressed in several dresses. The king is expected there this day; the best parlour is pretty clean for him to be entertained in. The king pays for all he has." But, alas for poor Evelyn's hedges! The Czar, by way of exercise, and to prove his strength, used to trundle a wheel-barrow, full tilt, through a favourite holly-hedge, "which," says Evelyn, "I can still show in my ruined gardens at Saye's Court (thanks to the Tzar of Muscovy)." The Czar employed his days in acquiring information on all branches of naval architecture, and in sailing about the river with

* The site of Evelyn's mansion was long covered with a workhouse; the shady walks and splendidly kept hedges are now replaced by a victualling yard, where oxen and hogs are slaughtered for the use of the navy, and the transformation of all his haunts in the neighbourhood has been unpleasantly complete.

Carmarthen and Sir Anthony Deane, commissioner of the navy. "The Navy Board received directions from the Admiralty to hire two vessels to be at the command of the Tzar whenever he should think proper to sail on the Thames," and the king made him a present of a small vessel, the *Royal Transport*, giving orders to have such alterations and accommodations made in her as the Czar might desire. "But his great delight was to get into a small-decked boat, belonging to the dockyard, and taking only Menzikoff, and three or four others of his suite, to work the vessel with them, he being the helmsman; by this practice he said he should be able to teach them how to command ships when they got home. Having finished their day's work, they used to resort to a public house in Great Tower Street, close to Tower Hill, to smoke their pipes, and drink beer and brandy. The landlord had the Tzar of Muscovy's head painted and put up for his sign." The original sign remained till 1808.

Greenwich Hospital surprised him, and King William, having one day asked him how he liked his hospital for decayed seamen, Peter answered simply, "If I were the adviser of your Majesty, I should counsel you to remove your court to Greenwich, and convert St. James's into a hospital." In the first week of March a sham naval fight was organised near Spithead, for his amusement, eleven ships being engaged. The *Postman*, a journal of the period, says, "The representation of a sea engagement was excellently performed before the Tzar of Muscovy, and continued a considerable time, each ship having twelve pounds of powder allowed; but all the bullets were locked up in the hold, for fear the soldiers should mistake." The enterprising journal did not, probably, send down a special representative, as would any leading paper of to-day, and the small quantity of powder allowed must be a mistake. The Czar was greatly pleased with the performance, and told Admiral Mitchell, who arranged the performance, that "he considered the condition of an English admiral happier than that of a Tzar of Russia." On their way home from Portsmouth, the Russian party, twenty-one in all, stopped a night at Godalming. The sea air had done so much good to their appetites that at dinner they managed to get through an entire sheep, three quarters of lamb, five ribs of beef, weighing three stone, a shoulder and loin of veal, eight fowls, eight rabbits, two dozen and a half of sack, and one dozen of claret. Their light breakfast consisted of half a sheep, a quarter of lamb, ten pullets, twelve chickens, seven dozen eggs, salad "in proportion," three quarts of brandy, and six quarts of mulled wine.

When residing at Deptford, he made the acquaintance of the celebrated Dr. Halley, "to whom he communicated his plan of building a fleet, and in general of introducing the arts and sciences into his country," and asked his opinions and advice on various subjects. The doctor spoke German fluently, and the Tzar was so much pleased with the philosopher's conversation and remarks that he had him frequently to dine with him; and in his company he visited the Royal Observatory in Greenwich Park. An important concession was made by him to some leading merchants, through the influence of the Marquis of Carmarthen. Tobacco had been so highly taxed that none but the wealthy Russians could afford it. The Czar agreed that on paying him down £12,000 (some accounts say £15,000) it should go in duty free. He stipulated that his friend Carmarthen should receive five shillings for every hogshead so admitted. Peter stuck to his friends, and

his kindheartedness in general does much to obliterate the memory of some traits of character which are not to his credit. On leaving England, he "gave the king's servants, at his departure, one hundred and twenty guineas, which was more than they deserved, they being very rude to him," says one plain-speaking historian. To the king he presented a rough ruby which the jewellers of Amsterdam had valued at £10,000 sterling. Peter carried this gem to King William in his waistcoat pocket, wrapped up in a piece of brown paper. The king had treated him in a royal fashion, so far as Peter would allow him, and before he departed induced him to sit to Sir Godfrey Kneller for his portrait, which is now at Windsor. Four yachts and two ships of the Royal Navy were placed at his disposal when he departed once more for Holland. Peter took with him to Russia three English captains who had served in the Royal Navy, twenty-five captains of the merchant service, thirty pilots, thirty surgeons, two hundred gunners, and a number of mechanics and smiths, making a total of little less than five hundred persons, all natives of Great Britain. A letter from one of them to a relative in England shows how much Peter did, almost immediately on his return to Russia, in the interests of his navy. He had already thirty-six ships of war: twenty, ranging from thirty to sixty guns each, were to be launched the following spring; eighteen galleys were being constructed by Italian workmen, and one hundred smaller vessels were on the stocks. The forests of masts he had seen at London and Amsterdam had fired his ambition, and we now find him not merely determined to have a navy, but a port of the first class. Hence St. Petersburg.

Passing over events in the history of Peter the Great not bearing on maritime subjects, we learn that "Five months had scarcely elapsed from laying the first stone of St. Petersburg, when a report was brought to the Tzar that a large ship, under Dutch colours, was standing into the river. It may be supposed this was a joyful piece of intelligence for the founder. It was nothing short of realising the wish nearest his heart: to open the Baltic for the nations of Europe to trade with his dominions, it constituted them his neighbours; and he at once anticipated the day when his ships would beat the Swedish navy, and drive them from a sea on which they had long ridden triumphant with undivided sway. When Peter was employed in building his fleet at Voronitz, Patrick Gordon one day asked him, 'Of what use do you expect all the vessels you are building to be, seeing you have no seaports?' 'My vessels shall make ports for themselves,' replied Peter, in a determined tone; a declaration which was now on the eve of being accomplished.

"No sooner was the communication made, than the Tzar, with his usual rapidity, set off to meet this welcome stranger. The skipper was invited to the house of Menzikoff: he sat down at table, and to his great astonishment, found that he was placed next the Tzar, and had actually been served by him. But not less astonished and delighted was Peter on learning that the ship belonged to, and had been freighted by his old Zaardam friend, with whom he had resided, Cornelius Calf. Permission was immediately given to the skipper to land his cargo, consisting of salt, wine, and other articles of provisions, free of all duties. Nothing could be more acceptable to the inhabitants of the new city than this cargo, the whole of which was purchased by Peter, Menzikoff, and the

several officers, so that Auke Wybes, the skipper, made a most profitable adventure. On his departure he received a present of five hundred ducats, and each man of the crew, one hundred rix-dollars, as a premium for the first ship that had entered the port of St. Petersburg.* The second ship to arrive was also Dutch; the third was an English vessel; both received the same premium. The rapidity with which the swampy banks of the Neva were covered with wharfs and buildings has been almost unexampled in history. Peter had Amsterdam in his eye when he laid out St. Petersburg, and he had secured the services of a number of Dutch ship-builders and masons, architects, and surveyors well versed in making solid foundations on swampy land.

And now, while England was distracted by the civil war of the first Pretender, and by the rupture with Charles XII. of Sweden, she had much trouble with the Barbary pirates, who, in the West Indies in particular, constantly harassed her shipping interests. So great a nuisance had these "water-rats" become that £100 head-money was offered for every captain, £40 for any rank from a lieutenant to a gunner, and £20 for every pirate seaman. Any private who delivered up his commander was entitled to £200 on the conviction of the latter. But there were also at that period "land-rats" at home, as bad as any pirate, preying on the public purse. This was the epoch when Hamlet's words "they're all mad there," might almost have been said of England, and with even greater truth of our neighbours across the Channel. Two extraordinary schemes, one of which was to make France the richest of commercial nations, and the second of which was to pay the national debt of England, were propounded, great companies raised, and supported by half the people, from princes to petty tradesmen. As projects depending upon commerce with foreign countries, they, of course, are intimately connected with our subject. Need it be said that the writer refers to the two extraordinary delusions known as the Mississippi Scheme and the South Sea Bubble?

The first of these projects was designed to develop the resources of the great country lying round the Mississippi, especially Louisiana; to open up mineral deposits supposed to be wonderfully rich; and to carry on a general trade with that part of America. The second, which more intimately concerns us, included a monopoly of trade with the South Sea, a somewhat elastic title, but which meant at the time commerce with the countries of Spanish America. The South Sea Company was originated by Harley, Earl of Oxford, in 1711, with the distinct view of "providing for the discharge of the army and navy debentures, and other parts of the floating debt, amounting to nearly ten million sterling." A company of merchants took this debt upon themselves, the Government agreeing to secure them, for a certain period, six per cent. interest, and grant them the monopoly of the trade to the South Seas. The most exaggerated ideas relating to the mineral wealth of South America were prevalent at the time, and when a report, most industriously spread, was circulated that Philip V. of Spain was ready to concede four ports of Chili and Peru for purposes of trade, South Sea stock rose in value with extraordinary rapidity. That monarch, however, never meant to grant anything like a free trade to the English. After sundry negotiations had been opened the royal assent was given to a contract, conceding

* Scheltema, a Dutch authority cited by Barrow.

the privilege of supplying the colonies with negroes for thirty years, and of sending *once a year one vessel* "limited both as to tonnage and value of cargo" to trade with Mexico, Peru, and Chili, the king to enjoy one-fourth of the profits. On these hard conditions and slender privileges was the great Bubble blown into popular esteem. Rumours of commercial treaties between England and Spain were circulated, whereby the latter was to grant free trade to all her colonies; the rich produce of the Potosi mines "was to be brought to England until silver should become almost as plentiful as iron. For cotton and woollen goods, with which we could supply them in abundance, the dwellers in Mexico were to empty their golden mines. The company of merchants trading to the South Seas would be the richest the world ever saw, and every hundred pounds invested would produce hundreds per annum to the stockholder."* These and still more lying statements were spread in every direction. The stock rose like a rocket. And, so far as the present writer can discover, the first voyage of the one annual ship, not made till 1717, six years after the first establishment of the company, was also its last! The following year the trade was suppressed by the rupture with Spain.

"It seemed at that time as if the whole nation had turned stock-jobbers. Exchange Alley was every day blocked up by crowds, and Cornhill was impassable for the number of carriages. Everybody came to purchase stock. 'Every fool aspired to be a knave.' In the words of a ballad published at the time, and sung about the streets—

"Then stars and garters did appear
Among the meaner rabble;
To buy and sell, to see and hear
The Jews and Gentiles squabble.

'The greatest ladies thither came,
And plied in chariots daily;
Or pawned their jewels for a sum
To venture in the Alley.'"

Not merely South Sea stock, but schemes of even a wilder nature now deluged the market. It would seem incredible, but it is vouched for on good authority, that one adventurer started "*A company for carrying on an undertaking of great advantage, but nobody to know what it is,*" and in one day sold a thousand shares, the deposit on which was £2 per share. He thought it prudent to decamp with the £2,000, and was no more heard of. Mackay publishes a list of eighty-six bubble companies, which were eventually declared illegal and abolished. But the South Sea Bubble was a Triton among these minnows, and the directors, having once tasted the profits of their scheme by the rapid rise of its shares, kept their emissaries at work. Nor indeed were they much needed, for every person interested in the stock endeavoured to draw a knot of listeners round him in 'Change Alley, or its purlieus, to whom he expatiated on the treasures of the South American Seas. Then came the rumour that Gibraltar was to be exchanged for certain places on the coast of Peru. Instead of paying a tribute to the King of Spain, the company would be able to trade freely, and send as many ships as they liked.

* One of the very best accounts of the South Sea Bubble is to be found in Charles Mackay's "*Memoirs of Extraordinary Popular Delusions,*" frequently quoted above.

"Visions of ingots danced before their eyes,"

and the directors opened their books for a subscription of a million, and then for a second million, and the frantic speculators took it all. Swift described 'Change Alley as a gulf in the South Seas :—

"Subscribers here by thousands float,
And jostle one another down,
Each paddling in his leaky boat,
And here they fish for gold and drown.

"Now buried in the depths below,
Now mounted up to heaven again,
They reel and stagger to and fro,
At their wits' end, like drunken men.

"Meantime, secure on Garraway cliffs,
A savage race, by shipwrecks fed,
Lie waiting for the foundering skiffs,
And strip the bodies of the dead."

The directors used every art to keep up the price of the stock. It rose finally to £1,000 per share. A few weeks afterwards it was down to £175, then to £135, and the Bubble had burst.

To detail the various plans tried or suggested to bolster up the company, the Parliamentary inquiries, or the stringent measures adopted to punish the directors, would be out of place here. Suffice it to say that a bill was brought in for restraining the South Sea directors and officers from leaving the kingdom for a twelvemonth. They were forbidden to realise on their estates and effects, neither must they will or remove them. Eventually they were obliged to disgorge their gains. "A sum amounting to two million and fourteen thousand pounds was confiscated from their estates towards repairing the mischief they had done, each man being allowed a certain residue in proportion to his conduct and circumstances, with which he might begin the world anew. Sir John Blunt was only allowed £5,000 out of his fortune of upwards of £183,000; Sir John Fellows was allowed £10,000 out of £243,000; Sir Theodore Janssen £50,000 out of £243,000; Mr. Edward Gibbon £10,000 out of £106,000; Sir John Lambert £5,000 out of £72,000." After every effort on the part of the Committee of Investigation, a dividend of about 33 per cent. was divided among the unfortunate proprietors and stock-holders. It took long before public credit was restored.



COMMODORE ANSON.

CHAPTER III.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

A Grand Epoch of Discovery—Anson's Voyage—Difficulties of manning the Fleet—Five Hundred Invalidated Pensioners drafted—The Spanish Squadron under Pizarro—Its Disastrous Voyage—One Vessel run ashore—Rats at Four Dollars each—A Man-of-war held by eleven Indians—Anson at the Horn—Fearful Outbreak of Scurvy—Ashore at Robinson Crusoe's Island—Death of two-thirds of the Crews—Beauty of Juan Fernandez—Loss of the *Wager*—Drunken and Insubordinate Crew—Attempt to blow up the Captain—A Midshipman shot—Desertion of the Ship's Company—Prizes taken by Anson—His Humanity to Prisoners—The *Gloucester* abandoned at Sea—Delightful Stay at Tinian—The *Centurion* blown out to Sea—Despair of those on Shore—Its Safe Return—Capture of the Manila Galleon—A Hot Fight—Prize worth a Million and a half Dollars—Return to England.

THE second of the greatest epochs of discovery—one, indeed, hardly inferior to that of Columbus and Da Gama, when Dampier, Byron, Wallis, and Carteret, Cook, and Clerke may be said to have substantially completed the map of the world in its most essential and leading features—would follow in proper sequence here, but for a pre-arranged plan, which will place "The Decisive Voyages of the World" by themselves. One voyage of this period, that of Commodore Anson, deserves mention, inasmuch as it was instigated for the purpose of making reprisals on the Spaniards for their behaviour in searching English ships found near any of their settlements in the West Indies or Spanish Main, and not for attempts at discovery. It also gives some little insight into the condition

of the navy at the period. It was most wretchedly equipped and manned, and although the ships were placed under Anson's command in November, 1739, they were not ready to sail till ten months later, so great was the difficulty in obtaining men. They had to be taken from all and any sources. Five hundred out-pensioners from Chelsea Hospital were sent on board, many of whom were sixty years of age, and some threescore and ten. Before the ships sailed, 240 of them, fortunately for themselves, deserted, their place being filled by a nearly equal number of raw marines, recruits who were so untrained that Anson would not permit them to fire off their muskets, for fear of accidents! Of the poor pensioners who sailed, not one returned to tell the story of their disasters, while of the whole squadron, consisting of six ships of war, mounting 226 guns, one alone, the *Centurion*, commanded by Anson himself, reached home, after a cruise of three years and nine months. The history of this voyage, as told by the chaplain of the vessel,* is one round of miseries and disasters.

"Mr. Anson," says the narrator of this eventful voyage, "was greatly chagrined at having such a decrepit attachment allotted to him; for he was fully persuaded that the greatest part of them would perish long before they arrived at the scene of action, since the delays he had already encountered necessarily confined his passage round Cape Horn to the most rigorous season of the year. Sir Charles Wager (one of the Lords of the Admiralty) too, joined in opinion with the Commodore, that the invalids were no way proper for this service, and solicited strenuously to have them exchanged; but he was told that persons who were supposed to be better judges than he or Mr. Anson, thought them the properest men that could be employed on this occasion." All of the poor pensioners "who had limbs and strength to walk out of Portsmouth deserted, leaving behind them only such as were literally invalids. . . . Indeed; it is difficult to conceive a more moving scene than the embarkation of these unhappy veterans. They were themselves extremely averse to the service they were engaged on, and fully apprised of all the disasters they were afterwards exposed to, the apprehensions of which were strongly marked by the concern that appeared in their countenances, which were mixed with no small degree of indignation." Nor can one read these facts without sharing the same feeling. Brave men who had spent the best of their youth and prime in the service of their country, were ruthlessly sent to certain death.

On the 18th of September, 1740, the squadron, consisting of five men-of-war, a sloop-of-war, and two tenders, or victualling ships, made sail. The vessels comprised the *Centurion*, of sixty guns and 400 men, commanded by George Anson; the *Gloucester* and *Severn*, each fifty guns and 300 men; the *Pearl*, of forty guns and 250 men; the *Wager*, of twenty-eight guns and 160 men; and the *Tryal* sloop, eight guns and 100 men. On their way down the Channel they were joined by other men-of-war convoying the Turkey, Straits, and American merchant fleets, so that for some distance out to sea the combined fleet amounted to no less than eleven vessels of the Royal Navy, and 150 sail of merchantmen. Anson called at Madeira, and refreshed his crews, from thence appointing the Island of St. Catherine's, on the coast of Brazil, as the rendezvous for his fleet. Arrived there

* The Rev. Richard Walter, M.A., Chaplain of the *Centurion*, who compiled the work so well known under the title of Anson's "Voyage Round the World," from the papers and material of the latter.

it was found that a large number of the men were sickly, as many as eighty being so reported on the *Centurion* alone, and the other ships in proportion. Tents were erected ashore for the invalids, and the vessels were thoroughly cleaned, smoked between decks, and finally washed well with vinegar. The vessels themselves required many repairs to fit them for the intended voyage round the Horn. The then governor of this Portuguese island, one Don Jose Sylva De Paz, behaved very badly, doing all in his power to prevent Anson from obtaining fresh provisions, and secretly dispatched an express to Buenos Ayres, where a Spanish squadron under Don Josef Pizarro then lay, with an account of the number and strength of the English ships. The history and disasters of this squadron would fill a long chapter.

Pizarro had with him six ships of war, and a very large force of men, two of the vessels having seven hundred each on board. But in spite of his superior strength, he avoided any engagement at this time, and seems to have been extremely desirous of rounding Cape Horn before Anson, for he left before his provision ships arrived. Notwithstanding this haste the two squadrons were once or twice very close together on the passage to Cape Horn, and the *Pearl*, being separated from the fleet, and mistaking the Spanish squadron for it, narrowly escaped falling into their hands. In a terrible gale off the Horn the Spanish vessels became separated, and Pizarro turned his own ship's head, the *Asia*, for the Plata once more. One of his squadron, the *Hermiona*, of fifty-four guns and 500 men, is believed to have foundered at sea, for she was never heard of more. Another, the *Guipuscoa*, a still larger ship, with 700 souls on board, was run ashore and sunk on the coast of Brazil. Famine and mutiny were added to the horrors of these voyages. On the latter-named ship 250 died from hunger and fatigue, for those who were still strong enough to work at the pumps received only an ounce and a half of biscuit *per diem*, while the incapable were allowed an ounce of wheat! Men fell down dead at the pumps, and out of an original crew of 700, not more than eighty or a hundred were capable of duty. The captain had conceived some hopes of saving his ship by taking her into St. Catherine's. When the crew learned his intention, they left off pumping, and "being enraged at the hardships they had suffered, and the numbers they had lost (there being at that time no less than thirty dead bodies lying on the deck) they all, with one voice, cried out, 'On shore! on shore!' and obliged the captain to run the ship in directly for the land, where the fifth day after she sunk with her stores and all her furniture on board her." Four hundred of the crew got, however, safely to shore. On another of the Spanish ships they became so reduced "that rats, when they could be caught, were sold for four dollars apiece; and a sailor who died on board had his death concealed for some days by his brother, who during that time lay in the same hammock with the corpse, only to receive the dead man's allowance of provisions." The *Asia* arrived at Monte Video with only half her crew; the *Esperanza*, a fifty-gun ship, had only fifty-eight remaining out of 450 men, and the *St. Estevan* had lost about half her hands. The latter vessel was condemned, and broken up in the Plata.

When Pizarro determined, in 1745, to return to Spain, they managed to patch up the *Asia*, at Monte Video, but had only 100 of the original hands left. They pressed a number of Portuguese, and put on board a number of English prisoners (not, however,

of Anson's squadron) and some Indians of the country. Among the latter was a chief named Orellana, and ten of his tribe, whom the Spaniards treated with great inhumanity. The Indians determined to have their revenge. They managed to acquire a number of long knives, and employed their leisure in cutting thongs of raw hide, and in fixing to each end of the thongs the double-headed shot of the quarter-deck guns, which when swung round their heads, became powerful weapons. In two or three days all was ready for their scheme of vengeance.

It was about nine in the evening, when the decks were comparatively clear, that Orellana and his companions, having divested themselves of most of their clothes, came together to the quarter-deck, approaching the door of the great cabin. The boatswain ordered them away. Orellana, however, paid no attention to him, placed two of his men at either gangway, and raising a hideous war-cry, they commenced the massacre, slashing in all directions with the knives, and brandishing the double-headed shot. The six who remained with the chief on the quarter-deck laid nearly forty Spaniards low in a few minutes, of whom twenty were killed on the spot. Many of the officers fled into the great cabin, and hastily barricaded the door. A perfect panic ensued on board. Many attempting to escape to the fore-castle were stabbed as they passed by the four Indian sentries, and others jumped into the waist, where they thought themselves fortunate to lie concealed among the cattle on board; a number fled up the main shrouds and kept on the tops or rigging. The fact is that those on board did not know whether it was not a general mutiny among the pressed hands and prisoners, and the yells of the Indians and groans of the dying, and the confused clamour of the crew, were all heightened in effect by the obscurity of the night. And now Orellana secured the arm-chest, which had been placed on the quarter-deck for security a few days before. It was of no use to him, as he only found a quantity of fire-arms, which he did not understand, or for which he had no ammunition; the cutlasses, for which he was in search, were fortunately hidden underneath. By this time Pizarro had established some communication with the gun-rooms and between decks, and discovered that the English prisoners had not intermeddled in the mutiny, which was confined to the Indians. They had only pistols in the cabin, and no ammunition for them; at last, however, they managed to obtain some by lowering a bucket out of the cabin window, into which the gunner, out of one of the gun-room ports, put a quantity of cartridges. After loading, they cautiously and partially opened the cabin door, fired several shots, at first without effect. At last, Mindinuetta, one of the captains of the original squadron, had the fortune to shoot Orellana dead on the spot, on which his faithful companions one and all leaped into the sea and perished. For full two hours these eleven Indians had held a ship of sixty-six guns, and manned by nearly 500 hands!

Pizarro, having escaped this peril, reached Spain in safety, "after having been absent between four and five years, and having," says the narrator, "by his attendance on our expedition, diminished the naval power of Spain by above three thousand hands (the flower of their sailors), and by four considerable ships of war and a patache." He had not encountered Anson, nor done any of his ships damage. To the disasters and adventures encountered by that commander we must now return.

Off Cape Horn the weather was so terrible that it obliged the oldest mariners on board

"to confess that what they had hitherto called storms were inconsiderable gales." Short, mountainous waves pitched and tossed the vessels so violently that the men were in perpetual danger of being dashed to pieces. One of the best seamen on the *Centurion* was canted overboard and drowned; his manly form was long seen struggling in the water, he being a good swimmer, while those on board were powerless to assist him. Another man was thrown violently into the hold and broke his thigh; a second dislocated his neck, and one



THE "CENTURION" OFF CAPE HORN.

of the boatswain's mates broke his collar-bone twice. The squalls were so sudden that they were obliged to lie-to for days together, almost under bare poles, and when in a lull they ventured to set a little canvas, the blasts would return and carry away their sails. Squalls of rain and snow constantly occurred. The *Centurion*, labouring in the heavy seas, "was now grown so loose in her upper works that she let in the water at every seam, so that every part within board was constantly exposed to the sea-water, and scarcely any of the officers ever lay in dry beds. Indeed, it was very rare that two nights ever passed without many of them being driven from their beds by the deluge of water that came in upon them." Shrouds snapped, and yards and masts were lost on several of the squadron.

Two of the vessels, the *Severn* and the *Pearl*, became separated from the fleet, and were no more seen by them on the voyage.

But their worst trouble was a terrible outbreak of that insidious disease, the scurvy. In April, May, and part of June, the loss on the *Centurion* alone was two hundred men, and at length they could not muster more than six fore-mast hands in a watch capable of duty. The symptoms of this horrible complaint are various; but apart from the universal scorbutic manifestations on the body, diseased bones, swelled legs, and putrid gums, there is an extraordinary lassitude and weakness, which degenerate into a proneness to swoon, and even die, on the least exertion of strength, and a dejection of spirits which leads the invalid to take alarm at the most trifling accident. Let the reader imagine what all this meant on closely-packed ships, tempest-tossed off the dreaded Horn. When at length the *Centurion* reached the famed Crusoe Island, Juan Fernandez, the lieutenant "could muster no more than two quartermasters, and six fore-mast hands capable of working." Without the assistance of the officers, servants, and boys, they might never have been able to reach the island after sighting it, and with such aid they were *two hours* in trimming the sails. When their sloop, the *Tryal*, followed them to this haven of refuge, only the captain, lieutenant, and three men were able to stand by the sails. When, ten days later on, the *Gloucester* was seen in the offing, and Anson had sent off a boat laden with fresh water, fish, and vegetables for the crew, it was found that they had already thrown overboard two-thirds of their complement. It took them, with some assistance sent by Anson, a month before they could fetch the bay, contrary winds and currents, but more their utterly exhausted condition, being the causes. They were now reduced to eighty out of an original crew of three hundred men. Severe as have been the sufferings from scurvy endured on many of the Arctic expeditions, there is no case on record as painful as this. The three ships which reached Juan Fernandez had on board when they left England 961 men; before the ravages of the disease were stopped the number was reduced to 335, scarcely sufficient to man the *Centurion* alone. And it must be remembered that all this time they were uncertain of the movements of Pizarro and his fleet, which might appear among them at any moment. The refreshment obtained at the island, fresh water, vegetables, fruit, fish in abundance, a little goat's flesh, and seal-meat, proved of great value to those of the crew whose constitutions were not thoroughly undermined by the fell disease; but it was as much as they could do to effect the many repairs required on the vessels, to the extent even of removing and replacing masts.

Of the beauty of many parts of Juan Fernandez the chaplain speaks in enthusiastic terms. "Some particular spots occurred in these valleys, where the shade and fragrance of the contiguous woods, the loftiness of the overhanging rocks, and the transparency and frequent falls of the neighbouring streams, presented scenes of such elegance and dignity, as would with difficulty be rivalled in any other part of the globe. . . . I shall finish this article with a short account of the spot where the commodore pitched his tent, and which he made choice of for his own residence, though I despair of conveying an adequate idea of its beauty. The piece of ground which he chose was a small lawn, that lay on a little ascent, at the distance of about half a mile from the sea. In the front of his tent there was a large avenue cut through the woods to the seaside, which, sloping to the water with a

gentle descent, opened a prospect of the bay and the ships at anchor. This lawn was screened behind by a tall wood of myrtle sweeping round it, in the form of a theatre; the slope on which the wood stood rising with a much sharper ascent than the lawn itself, though not so much but that the hills and precipices within-land towered up considerably above the tops of the trees, and added to the grandeur of the view. There were besides two streams of crystal water, which ran on the right and left of the tent within a hundred yards' distance, and were shaded by the trees which skirted the lawn on either side, and completed the symmetry of the whole."

Meantime, the other vessels of the squadron did not put in an appearance. That two of them, the *Pearl* and *Severn*, were not to be expected, we have already learned; but what had become of the *Wager*? It was learned afterwards that while making the passage to the island of Socoro, one of the rendezvous of the squadron, she had become entangled among the rocks and grounded, soon becoming an utter wreck. The Honourable John Byron, afterwards a commodore in his Majesty's service, but then a youngster on board, has left an account of the disaster in his well-known work.* "In the morning, about four o'clock," says he, "the ship struck. The shock we received upon this occasion, though very great, being not unlike a blow of a heavy sea, such as in the series of preceding storms we had often experienced, was taken for the same; but we were soon undeceived by her striking again more violently than before, which laid her upon her beam-ends, the sea making a fair breach over her. Every person that now could stir was presently upon the quarter-deck; and many of those were alert upon this occasion that had not showed their faces upon deck for above two months before; several poor wretches, who were in the last stage of the scurvy, and who could not get out of their hammocks, were immediately drowned." Some seemed bereaved of their senses; one man was seen stalking about the deck flourishing a cutlass over his head, calling himself king of the country, and striking everybody he came near, till he was knocked down by some of those he had assaulted. "Some, reduced before by long sickness and the scurvy, became on this occasion as it were petrified and bereaved of all sense, like inanimate logs, and were banded to and fro by the jerks and rolls of the ship, without exerting any efforts to help themselves. . . . The man at the helm, though both rudder and tiller were gone, kept his station; and being asked by one of the officers if the ship would steer or not, first took his time to make trial by the wheel, and then answered with as much respect and coolness as if the ship had been in the greatest safety; and immediately after applied himself with his usual serenity to his duty, persuaded it did not become him to desert it as long as the ship kept together." The captain, who had dislocated his shoulder by a fall the day before, was coolness itself, and one of the mates did all in his power to inspire them with the belief that they would not be lost so near land. This wrought a change in many who but a few minutes before had been in despair, praying on their knees for mercy. It was another illustration of—

"When the devil was sick,"

* "The Narrative of the Honourable John Byron, containing an Account of the Great Distresses suffered by himself and his Companions on the Coast of Patagonia, from the year 1740 till their Arrival in England, 1746," &c.

for they commenced breaking in the casks of brandy or wine as they came up the hatchway, and several got so intoxicated that they were drowned on board, and lay floating about the decks for several days. The boatswain and some of the men would not leave the ship so long as there was any liquor to be found on her; and Captain Cheap, having got off as many of the crew as would come, about a hundred and forty in number, suffered himself to be helped out of his bed, put into the boat, and carried ashore.

After passing a miserable night, almost without shelter, the calls of hunger—most of them having fasted forty-eight hours—obliged them to seek for sustenance. Two or three pounds of biscuit dust, one sea-gull, and some wild celery, were boiled up into a kind of soup, which made all very ill who partook of it. It was at first supposed that the wild herb was the cause, but it was soon discovered that the biscuit dust, the sweepings of the bread-room, had been gathered in a tobacco bag, and that the tobacco dust mingled with it had acted as an emetic.

Still a number of the wretched crew remained on board, pilfering all they could find, often whether it could be of use to them or not, and showing a particular desire to provide themselves with arms and ammunition. They averred that the authority of the officers must cease with the loss of the ship; but as they came ashore, the arms were taken from them. When the boatswain came ashore in laced clothes, Captain Cheap knocked him down. "It was scarce possible to refrain from laughter at the whimsical appearance these fellows made, who, having rifled the chests of the officers' best suits, had put them on over their greasy trousers and dirty checked shirts. They were soon stripped of their finery, as they had before been obliged to resign their arms." The cutter, turned keel upwards, was now placed on props and covered, so that it made a reasonably comfortable habitation. Shell-fish were found in tolerable abundance, "but this rummaging of the shore," says Byron, "was now become extremely irksome to those who had any feeling, by the bodies of our drowned people thrown among the rocks, some of which were hideous spectacles, from the mangled condition they were in by the violent surf that drove in upon the coast. These horrors were overcome by the distresses of our people, who were even glad of the occasion of killing the gallinazo (the carrion crow of that country) while preying on these carcases, in order to make a meal of them."

Such stores as could be landed were placed in a guarded tent, and doled out carefully. A few Indians arrived, and, after some parley, proved friendly, and were presented with sundry trifles. The looking-glasses astonished them; "the beholder could not conceive it to be his own face that was represented, but that of some other behind it, which he therefore went round to the back of the glass to find out." They left, and in two days returned with three sheep, which astonished the officers, inasmuch as they were far from any of the Spanish settlements.

And now mutiny and desertion ensued. One section of the men, "a most desperate and abandoned crew," attempted, by placing a barrel of gunpowder close to the captain's hut, with a train to be lighted at a distance, to destroy their commander and his authority by one fell blow, but were dissuaded by one of their number, who had some conscience left. They eventually built a punt, and converted the hull of one of the ship's masts.

into a canoe, escaping therewith to the mainland. They were never heard of more. These men were a good riddance, but a more unfortunate event was to follow. Mr. Cozens, a midshipman, had been placed under confinement for being drunk, and using abusive language to the captain, but was soon after released. Subsequently he had a dispute with the surgeon, and later with the purser. The latter told him that he had "come to mutiny," and fired his pistol at him, narrowly missing him. The captain, hearing all this, rushed out, and, without asking any questions, shot Cozens through the head, and then declined to allow him to be removed to shelter. The wretched young man (whom Byron believes to have been purposely "kept warm with liquor, and set on by some ill-designing persons," as he had always been a good-natured, inoffensive man when sober) was allowed by the captain to die like a dog, "with no other covering than a bit of canvas thrown over some bushes," fourteen days afterwards. This gave the men a good excuse for that which they were about to execute.

It had been arranged that the long-boat, rescued from the wreck, should be lengthened. The captain proposed that they should proceed northwards in the Pacific, hoping that they might encounter and master one of the enemy's ships, and rejoin Commodore Anson; the men, very generally, were bent on making their voyage home through the Straits of Magellan. While the alterations were in progress, the matter rested temporarily, as they were occupied in saving portions of, or stores from, the wreck, or in obtaining shell-fish and sea-fowl, which seem not to have been too abundant. Byron had cherished in his little hut a poor Indian dog, which had become much attached to him. One day a hungry party of the men came to him, and, after a little ineffectual remonstrance, took the dog away and killed it; "upon which," says Byron, "thinking that I had at least as good a right to a share as the rest, I sat down with them, and partook of their repast. Three weeks after that I was glad to make a meal of his paws and skin, which, upon recollecting the spot where they had killed him, I found thrown aside and rotten." One of the men constructed a novel craft from a large cask, to which he lashed two logs, one on either side. In this he ventured out to sea, and often managed to get wild fowl. One day he was upset by a heavy sea, but managed to scramble to a solitary rock, where he remained two days, till accidentally rescued by a boat party.

While the coast was being reconnoitred, the "old cabal" had been revived, the debates of which generally ended in riot and drunkenness. The meeting of the leading mutineers was held in a large tent, which had been made snug, by lining it with bales of broadcloth driven from the wreck. Eighteen of the ship's company had possession of this tent, from whence committees were dispatched with their resolutions, and quite as often with demands for liquor. The captain seemingly acquiesced, so far as their projected voyage was concerned; but when they began to stipulate that his powers as commander must be restricted, he naturally insisted upon the full exercise of his rights. "This broke all measures between them, and they were from this time determined he should go with them, whether he would or no." The unfortunate affair concerning Cozens was raked up, and they threatened to put him under confinement, and bring him to trial in England. When, however, they found that the long boat, cutter, and barge were

barely large enough to carry all, they agreed to leave him behind, with the surgeon, and one of the officers of marines. Byron was taken on board, but, as he says, "was determined, upon the first opportunity, to leave them." They were in all eighty-one when they left the island. Their intention was to put into some harbour, if possible, every evening, as they were in no condition for long sea-trips, neither would their scanty provisions have lasted many days. Their water was contained in a few small powder barrels; their flour was to be lengthened out by a mixture of sea-weed; and their other supplies must depend upon their success in hunting or fishing. Next day they considered it necessary to send back the barge for some spare canvas, and Byron took the opportunity of leaving them. When they were clear of the long-boat, he found that the men on board contemplated deserting the deserters also. They "were extremely welcome to Captain Cheap." Some attempts were made to get a share of the provisions from the mutineers but they absolutely refused. When they had left the captain and the two other officers, they had given them six pieces of beef, the same of pork, and ninety pounds of flour. For a day or two after Byron's return with a few of the men, a small allowance was doled out to them; "yet it was upon the foot of favour," and soon ceased, after which they had to subsist on "a weed called laugh," fried in the tallow of some candles they had saved, and wild celery. The account of their sufferings, and eventual escape to Chili, forms the bulk of the volume from which this narrative is taken. What became of the long-boat and its crew of mutineers? More than three months after they deserted the captain, thirty of them arrived at Rio Grande, on the coast of Brazil; twenty had been left at various points, and a larger number had died from starvation.

But to return once more to Anson. Just at the time they were straining all points to make ready for leaving Juan Fernandez, a sail was espied far in the offing. Whilst the vessel advanced, they fancied that she might be one of their own ships; but when she hauled off, it was determined to pursue her. The *Centurion* being in the most forward state, immediately got under sail; but the wind being light, they soon lost sight of the stranger. Persuaded that she was an enemy, they steered in the direction of Valparaiso for a couple of days; then considering that she must have reached her port, were on the point of abandoning the chase, when a gale blew them out of their course, at the same time bringing them once more in sight of the unknown vessel, which at first bore down upon them, showing Spanish colours. She appeared to be a large ship which had mistaken the *Centurion* for her consort, and was thought to be one of Pizarro's squadron; this induced Anson to clear the guns of all casks of water or provisions which encumbered them, and prepare for action. When near enough, she was discovered to be only a merchantman, the *Carmelo*, without even as much as a tier of guns. A little later, four shot were fired among her rigging, on which not one of the crew would venture aloft. The ship yielded immediately. When the first lieutenant went on board, he was received with abject submission; and the passengers on board, twenty-five in number, were terrified at the prospect of the ill-treatment they should receive. But Anson was always humane and generous with a fallen foe, and they were soon re-assured. His kindness was not thrown away. When at length Captain Cheap and his brother-officers of the wrecked *Wager* arrived in Chili (then an appanage of the Spanish Crown)

they were particularly well treated at Santiago. "We found," says Byron, "many Spaniards here that had been taken by Commodore Anson, and had been for some time prisoners on board the *Centurion*. They all spoke in the highest terms of the kind treatment they had received; and it is natural to imagine that it was chiefly owing to that laudable example of humanity our reception here was so good." They even said that they should not have been sorry had he taken them to England.* Anson's prize on this occasion had on board large quantities of sugar, cloth, and some little cotton and tobacco; and in addition, that which was more valuable, several trunks of wrought plate, and over two tons of dollars ("twenty-three serons of dollars, each weighing upwards of 200 lbs. avoirdupois").

Shortly afterwards, Anson noted two sail, one of which appeared to be "a very stout ship," and which made for them, whilst the other stood off. By evening they were within pistol-shot of the nearest, "and had a broadside ready to pour into her, the gunners having their matches in their hands, and only waiting for orders to fire." The ship was hailed in Spanish, when the welcome voice of Mr. Hughes, lieutenant of the *Tryal*, answered in English that it was a prize taken by him a couple of days before. She had tried to escape in the night by showing no lights, but an opening or crevice in one of the ports had betrayed them. She was a merchantman of about 600 tons, and had much the same cargo as that taken by Anson, but not so much money on board. Her capture at that moment was invaluable, for the *Tryal* had sprung her mainmast, and was altogether unseaworthy. She was condemned, and her crew, guns, and stores, with some additions, were put on board the prize, now appropriately christened *The Tryal's Prize*. The sloop herself was scuttled and sunk. Shortly afterwards a third prize was taken, on which several Spanish lady passengers were found, who hid themselves in corners, till assured of honourable and courteous treatment. Anson ordered that they should retain their own cabins, with all the other conveniences and privileges they had enjoyed before, and ordered the Spanish pilot, the second in command, to stay with them as their guardian and protector. A fourth prize, of little value to the captors, as they could not dispose of much of the cargo in any way, but a clear loss to the Spaniards of 400,000 dollars, was taken a few days afterwards.

Next followed the capture of Paita, Peru, an important place in those days, though it offered little or no resistance. When the sailors in search of private pillage found the clothes of the Spaniards who had fled, they were seized with an irresistible impulse to try them on; and soon their dirty unmentionables and jackets were covered by embroidered clothes and laced hats, not forgetting the bag-wig of the day. Those who could not find men's clothes put on women's, and half the *Centurion's* crew were transformed into

* "Two or three days after our arrival" (at Santiago), says Byron, "the President sent Mr. Campbell and me an invitation to dine with him, where we were to meet Admiral Pizarro and all his officers. This was a cruel stroke upon us, as we had not any cloaths to appear in, and dared not refuse the invitation. The next day, a Spanish officer belonging to Admiral Pizarro's squadron, whose name was Don Manuel de Guiror, came and made us an offer of two thousand dollars. This generous Spaniard made this offer without any view of ever being repaid, but purely out of a compassionate motive of relieving us in our present distress." A part of the money was thankfully accepted, and they got themselves decently clothed.

masqueraders. The town was burned to the ground, after treasure, in the shape of plate, dollars, and other coin, to the amount of upwards of £30,000, had been taken, besides a number of valuable jewels, and plunder generally, which became the property of the immediate captors. A vessel in the harbour was taken, and five others scuttled and sunk. The Spaniards, in their representations sent to the Court of Madrid, estimated their total loss at a million and a half of dollars. After Anson left Païta, there were dissensions on board regarding the miscellaneous plunder, between those who had been ordered ashore and



SURRENDER OF THE "CARMELO."

those whose duty obliged them to remain on board. The Commodore ruled that it should be put into one common fund, to which he gave his entire share, and then divided impartially, in proportion to each man's rank and commission. To all but a few greedy grumblers this was perfectly acceptable, and the discontent, which might easily have been fanned into mutiny, was quashed at once.

A day or two afterwards, they rejoined the *Gloucester*, and found that its captain had taken a couple of small prizes, one of them with a cargo of wine, brandy, and olives in jars, and about £7,000 in specie. The people on the other, which was hardly more than a large boat or launch, pleaded poverty, and that their cargo was only cotton. The men on the barge had surprised them at dinner upon pigeon pie served on silver dishes, and suspicion was aroused, which subsided when some little examination had been instituted.

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When the packages, however, were more carefully examined on board the *Gloucester*, a considerable quantity of doubloons and dollars, to the amount of near £12,000, was discovered concealed among the cotton. Before leaving the South American coast, Anson sent fifty-nine prisoners, in two well-equipped launches taken from his prizes, to Acapulco, where they arrived safely, and spoke highly of the treatment they had received.

Anson was now on his way to the China Seas, to intercept, if possible, the Manilla galleon, of which he had received some tidings. On the voyage it became necessary to abandon the *Gloucester*. Besides the loss of masts, which were literally rotted out of her, she was tumbling to pieces from sheer rottenness; and when her captain reported on her condition, she had seven feet of water in the hold, although his officers and men had been kept constantly at the pumps for the past twenty-four hours. Her crew had become greatly reduced in numbers, and out of her total complement of ninety-seven, officers included, only sixteen men and eleven boys were capable of keeping the deck. The removal of the *Gloucester's* people, and such stores as could most easily be taken, occupied two days. It was with difficulty that the prize-money taken in the South Seas was secured; the prize goods were necessarily abandoned. "Their sick men, amounting to nearly seventy, were conveyed into the boats with as much care as the circumstances of that time would permit; but three or four of them expired as they were hoisting them into the *Centurion*." The *Gloucester* was set on fire in the evening, but did not blow up till six o'clock the following morning.

At Tinian, one of the Ladrone Islands, Anson stopped some time, refreshing his worn-out crew, and strengthening the ship. The island abounded in cattle, hogs, and poultry, running wild; in oranges, limes, lemons, cocoa-nuts, and bread-fruit. "The country did by no means resemble that of an uninhabited and uncultivated place; but had much more the air of a magnificent plantation, where large lawns and stately woods had been laid out together with great skill, and where the whole had been so artfully combined, and so judiciously adapted to the slopes of the hills and the inequalities of the ground, as to produce a most striking effect, and to do honour to the invention of the contriver." These compliments to Nature may often be paralleled in writers of the last century. When they had dropped anchor, such was the weakness of the crew that it took them five hours to furl their sails. "All the hands we could muster capable of standing at a gun," says the narrator, "amounted to no more than seventy-one, most of whom, too, were incapable of duty, except on the greatest emergencies. This, inconsiderable as it may appear, was the whole force we could collect in our present enfeebled condition from the united crews of the *Centurion*, the *Gloucester*, and the *Tryal*, which, when we departed from England, consisted of near a thousand hands." Some Indians ashore fled when they landed, leaving their huts, one of which, used as a large storehouse, was converted into a hospital for the sick, one hundred and twenty-eight in number. Numbers of these were so helpless that they had to be carried from the boats, the commodore assisting, as he had before at Juan Fernandez, and the officers following suit. The poor invalids soon felt the benefit of the abundant fresh fruits and water; and although twenty-one were buried in the first and succeeding day, they did not lose above ten more during the two months of their stay at the island.

One of the drawbacks of a stay at Tinian was the roadstead, which, with its coral bottom, afforded a bad anchorage during the western monsoons. This was convincingly proved to the people of the *Centurion*. In the third week of September the wind blew with such fury that all communication with the shore was cut off, as no boat could live in the sea raised by it. The small bower cable, and afterwards their best bower, parted. The waves broke over the devoted ship, and the long-boat, at that time moored astern, was on a sudden canted so high that it broke the transom of the commodore's cabin on the quarter-deck, and was itself stove to pieces, the poor boat-keeper, though extremely bruised, being saved almost by a miracle. The end of all this was that the ship was driven to sea, leaving Anson, several officers, and a great part of the crew on shore, amounting in the whole to one hundred and thirteen persons. The poor wretches on the ship expected each moment to be their last, as they were altogether too few and weak to work a large vessel.

"The storm which drove the *Centurion* to sea blew with too much turbulence to permit either the commodore or any of the people on shore to hear the guns which she fired as signals of distress; and the frequent glare of the lightning had prevented the explosions from being observed; so that when at daybreak it was perceived from the shore that the ship was missing, there was the utmost consternation amongst them, for much the greatest part of them immediately concluded that she was lost." Anson, whatever he thought himself, did all in his power to reason them out of the idea, and immediately proposed that if she did not return in a few days they should cut in half a small bark, a Spanish prize they had taken, and lengthen her about twelve feet, which would enable her to carry them all to China. After some days the men began to consider this their only chance, and worked zealously at their allotted employments. These were interrupted one day by "A sail!" being announced. Presently a second was descried, which quite destroyed the conjecture that it was the ship herself. The revulsion of feeling in Anson's bosom was so strong, that for once he was quite unmanned, and retired to his tent, with the bitter feeling that now he could not hope to signalise the expedition by any great exploit. He was, however, soon relieved by finding that the boats were Indian proas, which, after cruising off the island for a time, suddenly departed, and were lost to sight. The recital of the details connected with the transformation of the bark would be tedious; suffice it to say, that they had to manufacture many of the necessary tools, cut down trees, and saw them into planks, and dig a dry dock, while others were employed in collecting provisions. They were much mortified to find that all the powder ashore did not amount to more than ninety charges. What if the Spaniards should appear at this juncture?

However, in spite of all obstacles, they had proceeded so far with their work as to have fixed upon a date for their departure from the island. "But their project and labours were now drawing to speedier and happier conclusion; for, on the 11th of October, in the afternoon, one of the *Gloucester's* men, being upon a hill in the middle of the island, perceived the *Centurion* at a distance, and, running down with his utmost speed towards the landing-place, he in the way saw some of his comrades, to whom he hallooed out with great ecstasy, 'The ship! the ship!'" It was indeed the ship; and when

Anson heard of it, we can well believe that he broke through "the equable and unvaried character" he had hitherto preserved. The men were in a perfect state of frenzy. A boat with eighteen men, and fresh meats and fruits, was sent off to the *Centurion*, which came to anchor next day. She had been nearly three weeks absent. The chaplain who has left us the narrative of Anson's voyage was on board at the time. He describes their deplorable condition in a leaky ship, with three cables hanging loose, from one of which dragged their only remaining anchor; not a gun lashed or port closed; shrouds loose, and topmasts unriggered, and no sails which could be set except the mizen. The pumps alone gave employment for the whole of the available crew. "In these exigencies," says he, "no rank or office exempted any person from the manual application and bodily labour of a common sailor. They eventually raised their sheet anchor, which had been dragging at the bows, got up their mainyard, and generally got the ship in something like sailing trim. They were quite as rejoiced to see the island once more as were their companions to see them.

After a long stay at Macao, where the Chinese officials put all kinds of obstacles in the way of refitting and provisioning his ship, Anson set sail for the express purpose of intercepting the Manila galleon or galleons, which, indeed, had been the object of his long cruise off Mexico and South America. The annual ship plying between Acapulco and Manila, and *vice versa*, was always richly laden with the best the Spanish colonies afforded, and all on board the *Centurion* were now eager for the fray. Anson determined to lay off Cape Spiritu Santo, Samal (one of the Philippine group of islands), as the galleons always made that land first on the voyage to Manila. It was a month after they had gained the station that the coveted prize hove in sight. "On this a general joy spread through the whole ship." The Spaniards had determined to risk the fight, and it is needless to say that Anson was ready for them. He picked out about thirty of his choicest marksmen, whom he distributed among the tops, and they eventually did great execution. "As he had not hands enough remaining to quarter a sufficient number to each great gun in the customary manner, he therefore on his lower tier fixed only two men to each gun, who were to be solely employed in loading it, whilst the rest of his people were divided into different gangs of ten or twelve men each, who were continually moving about the decks, to run out and fire such guns as were loaded. By this management he was enabled to make use of all his guns; and instead of whole broadsides, with intervals between them, he kept up a constant fire without intermission; whence he doubted not to procure very signal advantages. For it is common with the Spaniards to fall down upon the decks when they see a broadside preparing, and to continue in that posture till it is given; after which they rise again, and presuming the danger to be for some time over, work their guns and fire with great briskness, till another broadside is ready; but the firing gun by gun, in the manner directed by the commodore, rendered this practice of theirs impossible." Several squalls of wind and rain about noon often obscured the galleon from their sight; but when the weather cleared up she was observed resolutely lying to, waiting her impending doom. Towards one o'clock the *Centurion* hoisted her colours, the enemy being within gunshot. Anson noted that the Spaniards had neglected to clear the decks, as they were still engaged in throwing overboard cattle

and lumber; and as all is supposed to be fair in war, he determined to worry them at once, and ordered the chase-guns to be fired into them. The galleon returned the fire with two of her stern chase-guns; "and the *Centurion* getting her sprit-sail-yard fore and aft, that if necessary she might be ready for boarding, the Spaniards, in a bravado, rigged their sprit-sail-yard fore and aft likewise. Soon after, the *Centurion* came abreast of the enemy, within pistol-shot, keeping to the leeward of them, with a view of preventing their putting before the wind, and gaining the port of Talapay, from which they were about seven leagues distant. And now the engagement began in earnest, and for the first half-hour Mr. Anson over-reached the galleon, and lay on her bow, where, by the great wideness of his ports, he could traverse almost all his guns upon the enemy, whilst the galleon could only bring a part of hers to bear. Immediately on the commencement of the action, the mats with which the galleon had stuffed her netting took fire, and burnt violently, blazing up half as high as the mizen-top. This accident, supposed to be caused by the *Centurion's* wads, threw the enemy into the utmost terror, and also alarmed the commodore, for he feared lest the galleon should be burnt, and lest he himself might suffer by her driving on board him. However, the Spaniards at last freed themselves from the fire by cutting away the netting, and tumbling the whole mass which was in flames into the sea. All this interval, the *Centurion* kept her first advantageous position, firing her cannon with great regularity and briskness; whilst at the same time the galleon's decks lay open to her top-men, who, having at their first volley driven the Spaniards from their tops, made prodigious havoc with their small-arms, killing or wounding every officer but one that appeared on the quarter-deck, and wounding in particular the general of the galleon himself."

Then for a little the *Centurion* lost the superiority of her original position; but still her grape-shot raked the Spaniard's decks with such cruel precision that they were covered with the dead and dying, encumbering the movements of those still fighting, who kept up as brisk a fire as they could. But the general himself was pretty nearly *hors de combat*, while the Spanish officers were rushing hither and thither, endeavouring vainly to keep the now disheartened men at their posts. They made one last effort, pointed and fired five or six guns with more precision than usual, and then yielded the contest. The galleon's colours had been singed off the ensign-staff in the beginning of the engagement, so she had to haul down the royal standard from her main-top-gallant-mast head, "the person who was employed to perform this office having been in imminent peril of being killed, had not the commodore, who perceived what he was about, given express orders to his people to desist from firing." And so the great *Nostra Signora de Cabadonga* became Anson's prize.

And she was indeed a prize. She had on board 35,682 ounces of virgin silver, 1,313,843 pieces of eight, besides some cochineal and other trifles, which hardly counted in comparison with the specie. She was a much larger vessel than the *Centurion*; and had five hundred and fifty men, and thirty-six large guns, besides twenty-eight pedreroes each carrying four-pound balls. During the action she had sixty-seven men killed, and eighty-four wounded; whilst the *Centurion* had only two killed, and seventeen wounded. Shortly after the galleon had struck, an officer came quietly to Anson, and told him the

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ANSON TAKING THE SPANISH GALLEON.

ship was on fire near the powder-room. The commodore showed no emotion, and gave orders to a few in regard to extinguishing it, which was happily done, without alarming the crew or informing the enemy. The galleon was constituted by Anson a post-ship in his Majesty's navy, the command being given to his first lieutenant, Mr. Saumarez. All but the officers and wounded of the prisoners were kept in the hold of the *Centurion*, two guarded hatchways being left open. As the Spaniards were two to one of the English, every precaution was necessary, but otherwise they were treated as well as possible. Unfortunately their allowance of water was necessarily small, one pint per day, the crew only receiving a pint and a half; and although not one died on the passage to the river of Canton, they were reduced to ghastly skeletons when they were discharged. Anson refitted and sold the galleon to the merchants of Macao, and, with about £400,000 worth of Spanish treasure, sailed for England, where he arrived in safety. The damage done by him to Spain was probably three or four times that represented by the above amount. The great galleon was alone, with her cargo, valued at a million and a half dollars; whilst the destruction of Paita, and the minor Spanish prizes, with large parts of their cargoes, were serious losses to Spain.

CHAPTER IV.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

Progress of the American Colonies—Great Prevalence of Piracy—Numerous Captures and Executions—A Proclamation of Pardon—John Theach, or "Black Beard"—A Desperate Pirate—Hand-and-glove with the Governor of North Carolina—Pretends to accept the King's Pardon—A Blind—His Defeat and Death—Unwise Legislation and consequent Irritation—The Stamp Act—The Tea Tax—Enormous Excitement—Tea-chests thrown into Boston Harbour—Determined Attitude of the American Colonists—The Boston Port Bill—Its Effects—Sympathy of all America—The final Rupture—England's Wars to the end of the Century—Nelson and the Nile—Battle of Copenhagen.

DURING the early part of the eighteenth century, while Europe was distracted by war, the American colonies were, "by peaceful and undisturbed pursuits, laying the foundation of that prosperity which enabled them, before the close of the century, to demand and obtain their severance from the mother country, and their social and political independence." So early as 1729, Philadelphia had 6,000 tons of shipping, and received in that year 6,208 emigrants from Great Britain. New York was then carrying on a large trade in grain and provisions with Spain and Portugal, besides forwarding considerable quantities of furs to England. New England was furnishing the finest spars and masts in the world, while that part of it which is now the State of Massachusetts had already 120,000 inhabitants, employing 40,000 tons of shipping, or about 600 vessels of all sizes. The fisheries were of great value, as much as a quarter of a million quintals of dried fish being annually exported to Spain, Portugal, and the Mediterranean. Carolina was doing a magnificent business in the export of rice, Indian corn, and provisions of all kinds; in pitch, turpentine, and lumber.

But one serious evil caused the colonists great annoyance and loss—the prevalence of piracy. The State last named suffered far more than the rest. Commercial restrictions, unwisely imposed by Great Britain, gave rise to a large amount of smuggling, and from smuggling to piracy was an easy transition. "These gangs of naval robbers were likewise frequently recruited by British sailors, who had been trained to ferocity and injustice by the legalised piracy of the slave-trade."* One Captain Quelch, the commander of a vessel which had committed numerous piracies, ventured to take shelter, with his crew, in Massachusetts in the year 1704. He was detected, tried, and hanged, with six of his accomplices, in Boston. In 1717 several vessels were captured on the coasts of New England by a noted pirate, Captain Bellamy, a man who carried matters with a high hand, having a vessel with twenty-three guns, and a crew of one hundred and thirty men. The vessel was wrecked shortly afterwards on Cape Cod, the captain and the whole of his crew, except six, perishing in the waves. The pitiful remainder gained the shore, their fate literally realising Defoe's words—

"When what the sea would not, the gallows may;"

for they were immediately conveyed to Boston, tried, and executed. A number of pirates were about the same time hanged in Virginia. In consequence of the repeated complaints of British merchants regarding these freebooters, George I. issued a proclamation offering a pardon to all pirates who should surrender to any of the colonial governors within twelve months; and in 1718 dispatched a few ships of war under Captain Rogers, who, repairing to New Providence, then a perfect den of sea-thieves, took possession of the place, and nearly all the pirates there took the benefit of the royal proclamation. Steed Bennet and Richard Worley, two pirate chiefs who had fled from New Providence at the approach of Rogers, took possession of the mouth of Cape Fear River. They were captured by Governor Johnson and Captain Rhett; and Bennet, who was a man of good education, and had held the rank of major in the British army, was executed at Charlestown, with forty-one of his accomplices. North Carolina had been for a long time the haunt of one of the most desperate villains of his time, John Theach, generally known as "Black Beard," from an enormous beard he wore, and which was adjusted, Grahame records, "with elaborate care in such an inhuman disposition as was calculated to excite both disgust and terror. . . . In battle, he has been represented with the look and demeanour of a fury; carrying three braces of pistols on holsters slung over his shoulders, and lighted matches under his hat, protruding over each of his ears. The authority and admiration which the pirate chiefs enjoyed among their fellows was proportioned to the audacity and extravagance of their outrages on humanity; and none in this respect ever challenged a rivalry with Theach. . . . Having frequently undertaken to personify a demon for the entertainment of his followers, he declared at length his purpose of gratifying them with an anticipated representation of hell; and in this attempt had nearly stifled the whole crew with the fumes of brimstone under the hatches of his vessel. In one of his ecstasies, whilst heated with liquor, and sitting in his cabin, he took a pistol in each hand, and, cocking them under the table, blew out the lights, and then with

* James Grahame, "The History of the United States of North America."

crossed hands fired on each side at his companions, one of whom received a shot that maimed him for life." He was an early Mormon, for he had fourteen women whom he called his wives. His chief security had been the fact that Charles Eden, the governor, and Tobias Knight, the secretary of the province, shared in his plunder and protected him. As he was rich, and had been apprised of Rogers' operations at New Providence, he judged it wise to accept the benefit of the king's proclamation, and, with twenty of his men, pretended to surrender to Eden, who had been a receiver of goods or gold stolen by him.

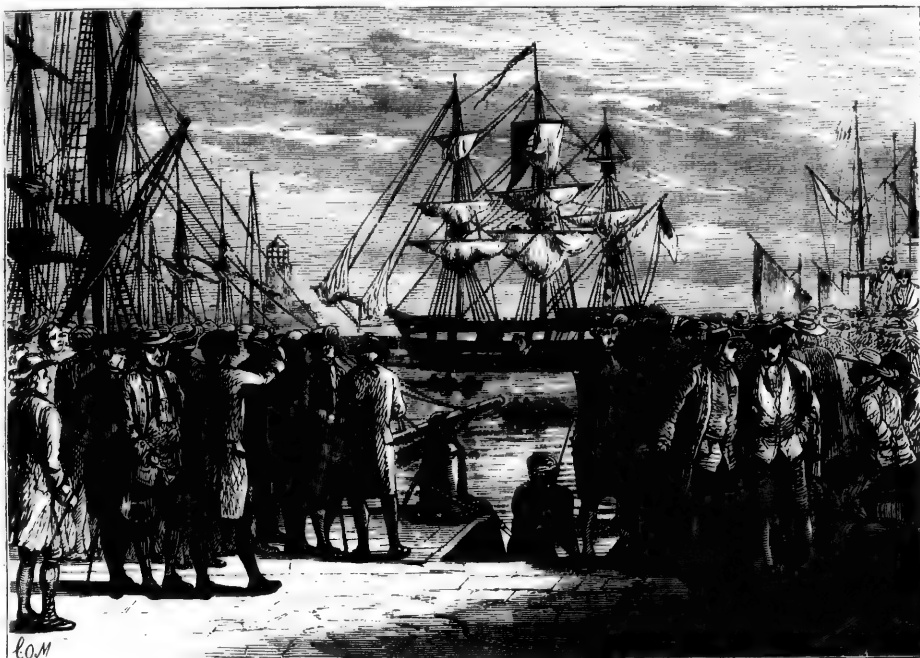


CAPE COD.

This was, however, only a blind. He fitted out almost immediately afterwards a sloop, which he entered at the Custom House as a regular trader. In a few weeks he returned to North Carolina, bringing with him a French ship in a state of perfect soundness, and with a valuable cargo on board, which he deposed on oath that he had found deserted at sea, a statement which quite satisfied Eden and Knight. Nobody else believed him, and some of the Carolinians who had suffered by his hands appealed to the Government of Virginia for aid in hunting down this pest of humanity. Maynard, the lieutenant of a ship of war, was dispatched after him, found him in Pamlico Sound, and, after a close encounter, prevailed. "Foreboding defeat, Theach had posted one of his followers with a lighted match over his powder magazine, that in the last extremity he might defraud

human justice of a part of its retributive triumph. But some accident or mistake prevented the execution of this act of despair. Teach himself, surrounded by slaughtered foes and followers, and bleeding from numerous wounds, in the act of stepping back to cock a pistol, fainted from loss of blood, and expired on the spot." The few survivors threw down their swords, and were spared—to die on the gallows shortly afterwards. Piracy was checked, but not obliterated, by these means; and about five years after this period no less than twenty-six of these "sea rats" were executed in Rhode Island.

This not being a history of America, the writer is spared all allusion to events of the



THE "DARTMOUTH" IN BOSTON HARBOUR.

period except so far as they bear on the sea and maritime matters. One of the greatest among a long series of mistakes made at the time by Great Britain was an expedient, ascribed to George Grenville, intended to strike a death-blow at smuggling. All the commanders and other officers of British ships of war stationed off the American coasts, or cruising in the American seas, now received injunctions and authority from the Crown to act as officers of the customs; they were compelled to take the usual oaths of office administered to the civil functionaries ashore; and, to reconcile them to what they might think a service degrading to them, they were to receive an ample share of contraband and confiscated cargoes. It must be remembered that they were totally ignorant of the laws which they were now required not merely to guard, but to administer; and they had not

the restraints of the ordinary Custom House officials, for whatever wrong they might commit, no nearer redress was open to the sufferer than an appeal to the Admiralty or Treasury of England. Many cargoes were unjustly confiscated, and a number of others unreasonably detained, to the great detriment of the owners; "and in several instances these violations of justice were ascribed rather to eager cupidity and confidence of impunity than to involuntary error." In other words, the legitimate merchant was often put in the same box as though he had been a pirate or smuggler. A traffic had long sprung up between the British and Spanish colonies of North and South America, advantageous to both. The same existed, in a lesser degree, between America and the French West India Islands. These new auxiliaries of the Custom House now and again seized indiscriminately and confiscated the ships, American or foreign, engaged in this trade. Meantime, the Government at home, ill-informed as it was, learned that there was much discontent in America, and hastened to repair the damage by passing a special Act of Parliament, declaring the legitimacy of the commerce between the American colonies and those of France and Spain. Unfortunately, they at the same time loaded the more valuable articles with duties which were nearly prohibitive, and must encourage smuggling.

Then came the passage of the Stamp Act, which was to tax every paper of a commercial, legal, or social nature, and which was so unpopular that the merchants of New York directed their correspondents in England to ship no more goods to them till it should be repealed. The people very generally agreed to confine their purchases to native productions. "I will wear nothing but homespun!" exclaimed one angry citizen. "I will drink no wine," echoed another, angry that wine must pay a new duty. "I propose," cried a third, "that we dress in sheepskins, with the wool on."* To encourage a woollen manufacture in America, it was recommended to the colonists to abstain from eating the flesh of lambs, and not a butcher durst afterwards expose lamb for sale. Its operations were ushered in at Boston by the tolling of bells; effigies of the authors and abettors were carried about the streets, and afterwards torn in pieces by the populace. At Portsmouth, New Hampshire, a funeral procession was organised, and a coffin bearing the inscription, "LIBERTY, AGED CXLV. YEARS," was paraded, amidst the booming of minute guns, and the roll of muffled drums. An oration was made over a grave prepared for its reception, at the conclusion of which some remains of life were, it was pretended, discovered in the body, which was thereupon snatched from the grave. The inscription was altered to "LIBERTY REVIVED," and a cheerful and hilarious procession then marched off with it. In several instances the residences of the governors, officials, and tax-collectors of States were burned to the ground, or greatly damaged. So strong was the current of popular will that the Custom House officers did not, in a large number of cases, attempt to stamp the clearances of vessels sailing. The law courts remained open, and ignored the want of stamps on legal documents, and marriages were consummated simply after putting up the banns, and not by stamped certificate. The almost total suspension of business with English shippers and merchants alarmed them greatly, and they were among the first to petition for its repeal. In Parliament, among many others, Pitt was

* George Bancroft, "History of the United States."

a warm friend to the American cause. In answer to a taunting speech from Grenville, he replied: "We are told that America is obstinate—that America is almost in open rebellion. *Sir, I rejoice that America has resisted.* Three millions of people so dead to all the feelings of liberty as voluntarily to submit to be slaves, would have been fit instruments to make slaves of all the rest." The Stamp Act was repealed March 19th, 1766, and in London itself was received with so much joy, that there was a general illumination, amid the ringing of church bells; and in America it was hailed with satisfaction, although subsequent action on the part of the English Government soon obliterated all memory of the concession.

Passing over political complications which led to the American Revolution, we must allude to the Tea Tax, the resistance to which was as strong as to any previous measure of our misguided Government. The Government decided to enforce it, although they were aware of its unpopularity, and the East India Company, which had the vast stock of 17,000,000 lbs. on hand, freighted several of their ships to America. Mark the result.*

On the 28th November, 1773, the ship *Dartmouth* appeared in Boston Harbour with one hundred and fourteen chests of the East India Company's tea. To keep the Sabbath strictly was the New England usage. But hours were precious; let the tea be entered, and it would be beyond the power of the consignee to send it back. The Select men held one meeting by day, and another in the evening, but they sought in vain for the consignees, who had taken sanctuary in the castle.

The Committee of Correspondence was more efficient. They met also on Sunday; and obtained from the Quaker, Potch, who owned the *Dartmouth*, a promise not to enter his ship till Tuesday; and authorised Samuel Adams to invite the Committees of the five surrounding towns, Dorchester, Roxbury, Brookline, Cambridge, and Charlestown, with their own townsmen and those of Boston, to hold a mass meeting the next morning. Faneuil Hall could not contain the people that poured in on Monday. The concourse was the largest ever known. Adjourning to "The Old South" Meeting House, on the motion of Samuel Adams, the assembly, composed of five thousand persons, resolved, unanimously, that "the tea should be sent back to the place from whence it came at all events, and that no duty should be paid on it." "The only way to get rid of it," said Mr. Young, "is to throw it overboard." The consignees asked for time to prepare their answer; and, "out of great tenderness," the body postponed proceeding with it till the next morning. Meantime the owner and master of the ship were *convented*, and forced to promise not to land the tea. A watch was also proposed. "I," said Hancock, "will be one of it, rather than that there should be none;" and a party of twenty-five persons, under the orders of Edward Proctor as its captain, was appointed to guard the tea-ship during the night.

The next morning the consignees jointly gave in their answer:—"It is utterly impossible to send back the teas; but we now declare to you our readiness to store them, until we shall receive further directions from our constituents!"—that is, until they could

* The above account is principally derived from Bancroft.

notify the British Government. The wrath of the meeting was kindling, when the Sheriff of Suffolk entered with a proclamation from the governor, warning the assembly to disperse. The notice was received with hisses, derision, and a unanimous vote not to disperse. In the afternoon Potch, the owner, and Hall, the master, of the *Dartmouth*, yielding to an irresistible impulse, engaged that the tea should return as it came, without touching land or paying duty. A similar promise was exacted of the owners of the other tea-ships, whose arrival was daily expected. In this way "it was thought the matter would have ended." Every shipowner was forbidden, on pain of being deemed an enemy to the country, to import or bring as freight any tea from Great Britain, till the unrighteous Act taxing it should be repealed; and this vote was printed and sent to every seaport in the Province, and to England. Six persons were chosen as foot-riders, to give due notice to the country towns of any attempt to land the tea by force; and the Committee of Correspondence, as the executive organ of the meeting, took care that a military watch was regularly kept up by volunteers armed with muskets and bayonets, who at every half-hour in the night regularly passed the word "All is well!" like sentinels in a garrison. Had they been molested in the night, the tolling of the bells would have been the signal for a general uprising.

The ships, after landing the rest of their cargo, could neither be cleared in Boston with the tea on board, nor be entered in England, and on the twentieth day from their arrival would be liable to seizure.

The spirit of the people rose with the emergency. Two more tea-ships which arrived were directed to anchor by the side of the *Dartmouth*, at Griffin's Wharf, that one guard might serve for all. In the meantime the consignees conspired with the Revenue officers to throw on the owner and master of the *Dartmouth* the whole burden of landing the tea, and would neither agree to receive it, nor give up their bill of lading, nor pay the freight. Every movement was duly reported, and the town became as furious as in the time of the Stamp Act. On the 9th there was a vast gathering at Newburyport, of the inhabitants of that and the neighbouring towns, and they unanimously agreed to assist Boston, even at the hazard of their lives. "This is not a piece of parade," they say, "but if an occasion shall offer, a goodly number from among us will hasten to join you."

In this state of things it was easily seen by the people of Boston that, the ships lying so near, the teas would be landed by degrees, notwithstanding any guard they could keep or measures taken to prevent it; and it was as well known that if they were landed nothing could prevent their being sold, and thereby the purpose of establishing the monopoly and raising a revenue fulfilled.

The morning of Thursday, the 16th of December, 1773, dawned upon Boston, a day by far the most momentous in its annals. The town of Portsmouth held its meeting on that morning, and, with six only protesting, its people adopted the principles of Philadelphia, appointed their Committee of Correspondence, and resolved to make common cause with the Colonies. At ten o'clock the people of Boston, with at least two thousand men from the country, assembled in the Old South. A report was made that Potch (the owner of the *Dartmouth*) had been refused a clearance from the

collector. "Then," said they to him, "protest immediately against the Custom House, and apply to the governor for his pass, so that your vessel may this very day proceed on her voyage to London."

The governor had stolen away to his country house at Milton. Bidding Potch make all haste, the meeting adjourned to three in the afternoon. At that hour Potch had not returned. It was incidentally voted, as other towns had already done, to abstain totally from the use of tea. Then, since the governor might refuse his pass, the momentous question recurred, "Whether it be the sense and determination of this body to abide by their former resolutions, with respect to the not suffering the tea to be landed?" After hearing addresses from Adams, Young, the younger Quiney, and others, the whole assembly of seven thousand voted unanimously, that the tea should not be landed.

It had been dark for more than an hour. The church in which they met was dimly lighted; when, at a quarter before six, Potch appeared, and satisfied the people by relating that the governor had refused him a pass, because his ship was not properly cleared. As soon as he had finished his report, Samuel Adams rose and gave the word:—"This meeting can do nothing more to save the country!" On the instant a shout was heard at the porch; the war-whoop resounded; a body of men, forty or fifty in number, disguised as Indians, passed by the door, and, encouraged by Samuel Adams, Hancock, and others, repaired to Griffin's Wharf, posted guards to prevent the intrusion of spies, took possession of the three tea-ships, and in about three hours three hundred and forty chests of tea, being the whole quantity that had been imported, were emptied into the bay, without the least injury to other property. All things were conducted with great order, decency, and perfect submission to Government. The people around, as they looked on, were so still that the noise of breaking open the tea-chests was plainly heard.

In Philadelphia, when a tea-ship arrived, the captain fearing the loss of his cargo, agreed to sail back again the following day.

During the whole period of her controversy with Great Britain, America was deriving a constant increase of strength, not merely from domestic growth, but by the immense volume of emigration from Europe. No complete record remains of its amount, but sufficient facts are known to show how vast it had become. "Within the first fortnight of August, 1773, there arrived at Philadelphia 3,500 emigrants from Ireland; and from the same document which has recorded this circumstance, it appears that vessels were arriving every month freighted with emigrants from Holland, Germany, and especially from Ireland and the Highlands of Scotland. About 700 Irish settlers repaired to the Carolinas in the autumn of 1773; and in the course of the same season no fewer than ten vessels sailed from Britain with Scottish Highlanders emigrating to the American States." Connecticut in ten years gained 50,000 in population, and when the final rupture occurred with the mother country, the United States had already reached the important number of about three and a quarter millions, or say a good million over the united populations of the Australasian colonies of to-day, including New Zealand. And it must never be forgotten that of the new-comers a large proportion were flying from grievances at home to which

they could no longer submit, and that they therefore added to and fanned the discontent prevailing in America. In view of such facts the action of the home Government is nearly explicable.

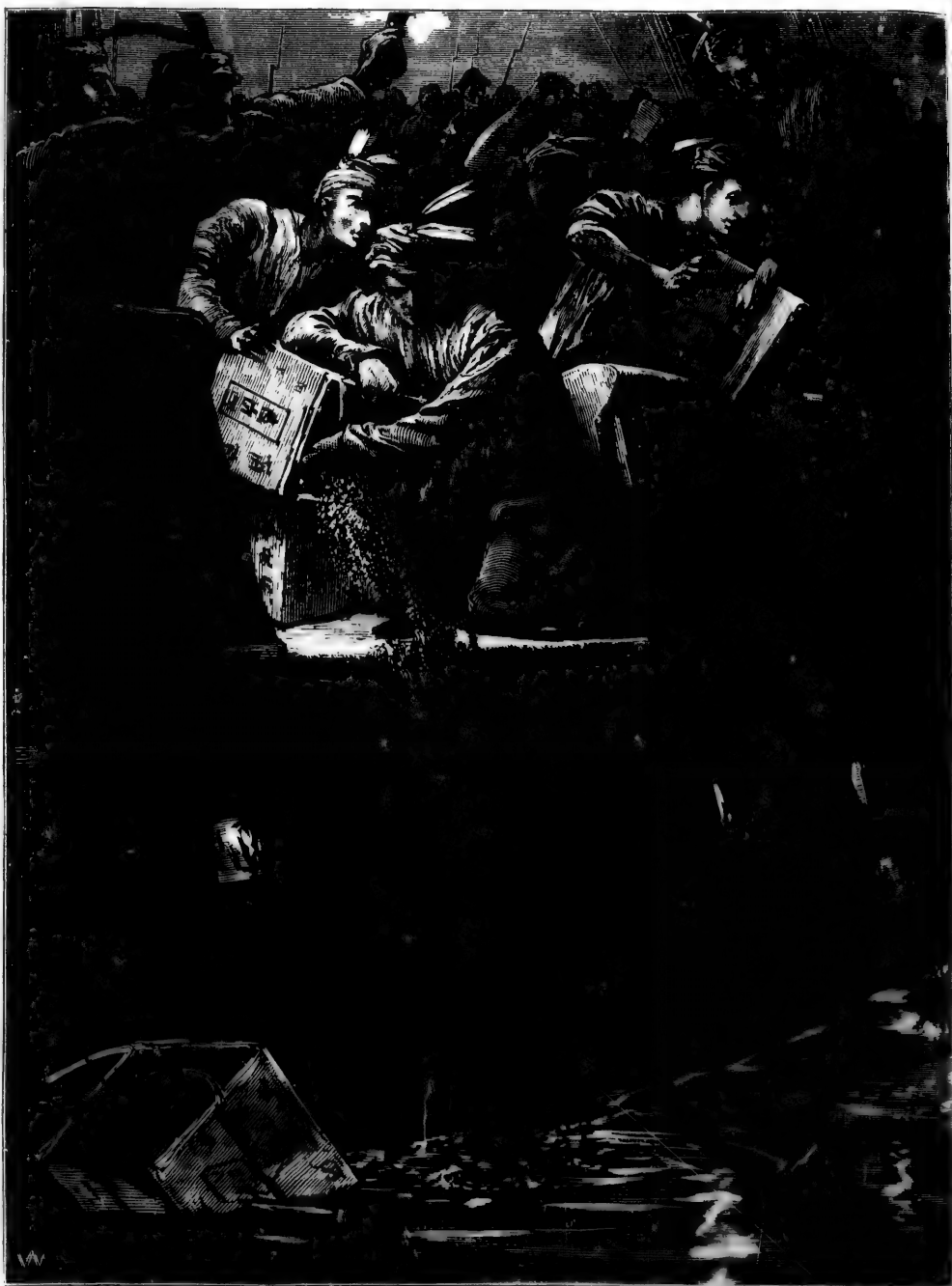
When the intelligence of the destruction of the tea reached England, although it was obvious that the opposition which had been shown was common to all the colonies, it was determined to make an example of Boston. "It was reckoned that a partial blow might be dealt to America with much greater severity than could be prudently exacted in more extensive punishment; and it was, doubtless, expected that the Americans in general, without being provoked by personal suffering, would be struck with terror by the rigour inflicted on a city so long renowned as the bulwark of their liberties. Without even the decent formality of requiring the inhabitants of Boston to exculpate themselves, but definitely assuming their guilt in conformity with the despatches of a governor who was notoriously at enmity with them, the Ministers introduced into Parliament a bill for suspending the trade and closing the harbour of Boston during the pleasure of the king. They declared that the duration of this severity would depend entirely upon the conduct of the objects of it; for it would doubtless be relaxed as soon as the people of Boston should make compensation for the tea that had been destroyed, and otherwise satisfy the king of their sincere purpose to render due submission to his Government." The bill encountered little or no opposition in Parliament, a few members only contending that milder measures should be tried. It is impossible to imagine such an occasion to-day. Think of the ports of Sydney or Melbourne, for example, being closed to all trade and commerce from outside, and hundreds of vessels prevented from unloading or loading there, because of irritation prevailing among the Australians, entirely produced by unwise legislation, and unjust taxation on the part of the mother country. Yet this is what was done with our American colonies little more than a hundred years ago.

Mark what followed. On the arrival of the first copy of the Boston Port Bill a town meeting was convened in that city, and it was recommended, "That all commercial intercourse whatever with Britain and the West Indies should be renounced by the American States till the repeal of the Act." At Philadelphia a liberal subscription was made for the relief of such of the poorer inhabitants of Boston whose livelihood had been ruined by this arbitrary proceeding. The Virginian House of Burgesses appointed the date on which the operation of the Act was to commence as a day of fasting, humiliation, and prayer.

On the 1st of June, 1774, the operation of the Boston Port Bill commenced. All the commercial business of the capital of Massachusetts was concluded at noon, and the harbour of this flourishing port was closed—till the gathering storm of the Revolution was to re-open it. "At Williamsburgh, in Virginia, the day was devoutly consecrated to the religious exercises which had been recommended by the Assembly. At Philadelphia it was solemnised by a great majority of the population with every testimonial of public grief; all the inhabitants, except the Quakers, shut up their houses; and after divine service a deep and ominous silence reigned through the city. In other parts of America it was also observed as a day of mourning; and the sentiments thus widely awakened were kept alive and exasperated by the distress to which the inhabitants of Boston were reduced from the

continued operation of the Port Bill, and by the fortitude with which they endured it. The rents of all the land-holders in and around Boston now ceased, or were greatly diminished; all the wealth which had been vested in warehouses and wharfs was rendered unproductive; from the merchants was wrested the commerce which they had reared, and the means alike of providing for their families and paying their debts; all the artificers employed in the numerous occupations created by an extensive trade shared the general hardships; and a great majority of that class of the community who earned daily bread by their daily labour were deprived of the means of support." The sympathy shown by the sister colonies was highly creditable, and often took the form of substantial relief. The inhabitants of Marblehead offered to the Boston merchants the use of their harbours, wharfs, and warehouses, together with their personal services in lading and unlading goods, free of all expense. The citizens of Salem (in the same State as Boston) concluded a remonstrance against the British measures as follows:—"By shutting up the port of Boston, some imagine that the course of trade might be turned hither, and to our benefit. . . . We must be lost to every idea of justice, and dead to all the feelings of humanity, could we indulge one thought of raising our fortunes on the ruins of our suffering neighbours." A country so thoroughly bound together surely deserved the independence which a couple of years later it secured.

No better excuse can be urged for England than that her hands were constantly full at this period. When there was not actual war there were always rumours of war. Fortunately for our country, in its greatest need its greatest hero's star was in the ascendant. How often in these pages must we recur again and again to the name of Nelson? The year after America had declared her independence, he was, it is true, but simply a lieutenant, and scarcely over nineteen years of age. He had already seen some service. He had been to the West Indies and to the Arctic Ocean, where, on Captain Phipps' expedition, occurred one of those little incidents which indicated a hero in embryo. Young Nelson was one day missing, and though every search was instantly made for him, it seemed entirely in vain, and all imagined he was lost. Somebody at length discovered him at a considerable distance off, on the ice, armed with a single musket, and fighting away with some object which, on nearer approach, proved to be an immense bear. Always slight in frame, and comparatively feeble in body, what was the youngster about? It was found that the lock of his musket proving useless, he had pursued the animal with the hope of tiring him, and then intended to knock him on the head. On his return he was reprimanded for leaving the ship without permission, and asked why he had been so rash. The young hero replied, "I wished, sir, to get the skin for my father;" and although there is no record of the fact, it may well be believed that his little escapade was not very severely punished. Almost immediately after his return from the frozen regions, we find him in the East Indies, where his health nearly gave way. For the second time in Nelson's career we find him almost abandoning the sea. "I felt impressed," wrote he long afterwards, "with an idea that I should never rise in my profession. My mind was staggered with a view of the difficulties which I had to surmount and the little interest I possessed. I could discover no means of reaching the object of my ambition. After a long and gloomy reverie, in which I almost wished myself overboard, a sudden glow of



DESTRUCTION OF THE TEA CARGOES.

patriotism was kindled within me, and hope presented my king and country as my patrons. 'Well then,' I exclaimed, 'I will be a hero, and confiding in Providence, I will brave every danger.'" From that moment his aspirations became inspirations, and he believed fully that

"The light which led him on,
Was light from Heaven."

The young sailor, or he who may become one, may learn very much from the earlier part



NELSON AND THE BEAR.

of Nelson's career. Again and again was he disappointed, and although momentarily irritable, he always ended by looking forward to the inevitable reward due to the man who places country and duty above all other considerations. After his services at Bastia and Calvi, where he lost that eye which afterwards served him so well from its blindness, his bravery was altogether overlooked in the despatches. "One hundred and ten days," said he, "I have been actually engaged at sea and on shore against the enemy; three actions against ships, two against Bastia in my own ship, four boat actions, two villages taken, and twelve sail of vessels burnt. I do not know that any one has done more; I have had the comfort to be always applauded by my commanders-in-chief, but never to be rewarded; and, what is more mortifying, for services in which I have been wounded, others have been praised who, at the time, were actually in bed, far from the

scene of action. They have not done me justice; but never mind—I'll have a gazette of my own!"

And what a gazette it was! When, in 1797, Nelson received a special grant for his services, a memorial had to be drawn up, when it was found that he had been engaged against the enemy upwards of *one hundred and twenty times*! During the latest war up to the above date he had assisted at the capture of seven sail of the line, six frigates, four corvettes, and eleven privateers; he had taken or destroyed nearly fifty sail of merchant vessels.

Then followed the great battle of the Nile. The French fleet having been discovered by Captain Samuel Flood, the action commenced at sunset. The shores of the Bay of Aboukir were lined with spectators, who beheld the approach of the English and the terrible conflict which ensued, in silent and awe-stricken astonishment. A brisk fire was opened by the *Vanguard*, which ship covered the approach of those in the rear; in a few minutes every man stationed at the first six guns in her fore part were all down, killed or wounded. Admiral Nelson was so entirely resolved to conquer, or to perish in the attempt, that he led into action with six ensigns, red, white, and blue—he could not bear the idea of his colours being carried away by a random shot from the enemy.

Nelson—long minus one eye and one arm—in this battle received a severe wound in his head, the skin of the forehead hanging down over his face. Captain Berry, who was standing near, caught him in his arms. It was the opinion of everyone, including the sufferer, that he was shot through the head. On being carried down in the cockpit, where several of his gallant crew were stretched with shattered limbs and mangled wounds, the surgeon immediately came with great anxiety to the admiral. "No," replied the hero, "I will take my turn with my brave fellows!" The agony of his wound increasing, he became convinced that he was dying, and sent for the chaplain, begging him to remember him to Lady Nelson; he even went so far as to appoint Hardy post-captain for the *Vanguard*. When the surgeon came to examine and dress the wound, it clearly appeared that it was not mortal, and the joyful intelligence spread quickly through the ship. As soon as the operation was over, Nelson sat down, and that very night wrote the celebrated official letter which appeared in the *Gazette*. He came on deck just in time to witness the conflagration of *L'Orient*. So terrible was the carnage at the battle of the Nile that the Bay of Aboukir was covered for a week with the floating corpses, and though men were continually employed to sink them, many of the bodies, having slipped from the shot, would re-appear on the surface. Alas! the accounts of these horrible scenes, painful as they are, yet pale before the latest horror in our own Thames—the loss of the *Princess Alice*, where more perished than in many a recorded sea-fight of days gone by.

After the battle, the officers vied with each other in sending various presents to the admiral, to show their delight that he had, though severely wounded, escaped death. Captain Hallowell, who had long been on the most intimate terms with Nelson, hit on the extraordinary idea of having an elegantly-furnished coffin constructed by his carpenter from the wreck of *L'Orient*, a grim present, which he ordered to be made for the admiral. It was conveyed on board, and it is stated that Nelson highly appreciated the present of his brave officer. Nelson kept it for some months upright in his cabin, till at length an old servant tearfully entreating him, he allowed it to be carried below. Nelson was now at the height of glory; never had before, or has since, any admiral received honours from so many various nations and crowned

heads. The following is a list of presents bestowed on him for his services in the Mediterranean between October, 1798, and October, 1799 :—

- From his king and country, a peerage of Great Britain and gold medal.
- From Parliament, for his own life and two next heirs, per annum, £2,000.
- From the Parliament of Ireland, per annum, £1,000.
- From the East India Company, £10,000.
- From the Turkey Company, a piece of plate of great value; from the City of London, a magnificent sword.
- From the Grand Signor, a diamond aigrette and rich pelisse, valued at £3,000.
- From the Grand Signor's mother, a rose set with diamonds, valued at £1,000.
- From the Emperor of Russia, a box set with diamonds, valued at £2,500.
- From the King of the Two Sicilies, a sword richly ornamented with diamonds, valued at £5,000.
- From the King of Sardinia, a box set with diamonds, valued at £1,200.

In addition to these, all accompanied by complimentary addresses or letters, he received presents from the Island of Zante, the city of Palermo, and private individuals. Had he not attained a "*Gazette* of his own?"

The battle of Copenhagen made Nelson's talents, in some respects, even more conspicuous. The Danes were admirably prepared for defence. Upwards of a hundred pieces of cannon were mounted on the Crown Batteries at the entrance of the harbour, while a line of twenty-five two-deckers, frigates, and floating batteries were moored across its mouth. A Dane who came on board during the ineffectual negotiations which preceded hostilities, having occasion to express his proposals in writing, found the pen thick and blunt, and holding it up, sarcastically said, "If your guns are not better pointed than your pens, you will make little impression on Copenhagen." Nelson himself said that of all the engagements in which he had borne a part, this was the most terrible. He had with him twelve ships of the line, besides frigates and smaller craft, the remainder of the fleet being with Sir Hyde Parker, the Commander-in-chief, four miles off. Three of his squadron grounded, and, owing to the fears of the masters and pilots, the anchors were let go nearly a cable's length from the enemy, whereas, had they proceeded a little further, they would have reached deeper water, and the victory would have been effected in half the time. The fight, which commenced at ten o'clock in the morning, was by no means decided at one in the afternoon, when Sir Hyde Parker signalled for the action to cease. It was reported to Nelson, who took no notice of it. The signal-lieutenant meeting him at the next turn, asked him if he should repeat it. "No," answered Nelson, "acknowledge it." Shortly afterwards he called after him to know if the signal for close action was still hoisted, and being answered in the affirmative, said, "Mind you keep it so." He now rapidly paced the deck, moving the stump of his right arm in a manner which always denoted great agitation; for the Commander-in-chief still signalled "leave off action." At last, turning to the captain, he said, "You know, Foley, I've only one eye, and I have a right to be blind sometimes," and he ordered his signal for closer battle to be nailed to the mast. Admiral Graves disobeyed the Commander-in-chief in similar manner, but the squadron of frigates moved off. About two o'clock great part of the Danish line had ceased to fire, some of their lighter ships were adrift, and some had struck. It was, however, difficult to take possession of them, as they were protected by the batteries of an island, and they themselves fired on the English boats as they approached. This irritated Nelson: "We must either," he said, "send on shore and stop these irregular proceedings, or send in fire-ships

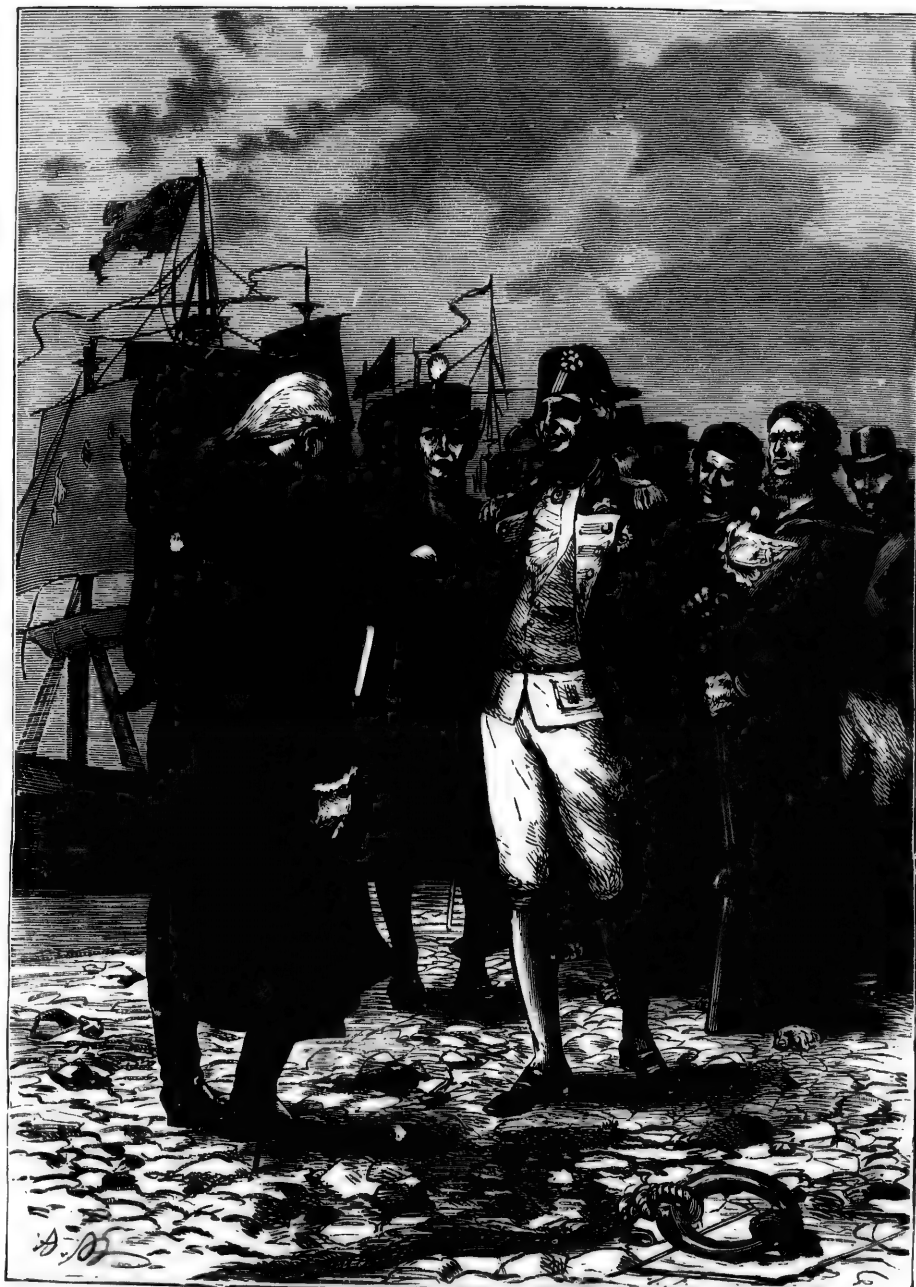
and burn the prizes." In this part of the battle the victory was complete, but the three ships ahead were still engaged, and considerably exposed. Nelson, with his usual presence of mind, seized the occasion to open a negotiation, and wrote to the Crown



LORD NELSON.

Prince as follows: "Vice-Admiral Lord Nelson has directions to spare Denmark when she no longer resists. The line of defence which covered her shores has struck to the British flag; but if the firing is continued on the part of Denmark, he must be obliged to set on fire all the prizes that he has taken, without having the power of saving the brave Danes who have defended them." Captain Frederick Thesiger was sent in with it. During his absence the remainder of the enemy's line eastward was silenced; the Crown Batteries continued to fire, till the Danish General Lindholm returned with a flag of truce, when

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the action closed. His message from the prince was to inquire what was the object of Nelson's note? Nelson replied that "it was humanity; he consented that the wounded Danes should be taken on shore, and that he on his part would take his prisoners out of the vessels and burn or carry off his prizes as he thought fit. He presented his humblest duty to the prince, saying that he should consider this the greatest victory he ever gained if it might be the cause of a happy reconciliation between the two countries." This proposal was accepted in the course of the evening, and a suspension of hostilities for twenty-four hours agreed upon, during which it was resolved that Nelson should land and negotiate in person with the prince.

Accordingly next morning he landed, being protected by a strong guard from the possible vengeance of the Danish population. "The battle so dreadfully destructive to the Danes was in sight of the city; the whole of the succeeding day was employed in landing the wounded, and there was scarcely a house without its cause for mourning. It was no new thing for Nelson to show himself regardless of danger, and it is to the honour of Denmark that the populace suffered themselves to be restrained. Some difficulty occurred in adjusting the duration of the armistice. He required sixteen weeks, giving, like a seaman, the true reason, that he might have time to act against the Russian fleet and return. This not being acceded to, a hint was thrown out by one of the Danish commissioners of the renewal of hostilities. 'Renew hostilities!' said he to the interpreter, 'tell him we are ready at a moment; ready to bombard this very night!' Fourteen weeks were at length agreed upon; the death of the Emperor Paul intervened, and the Northern Confederacy was destroyed. Nelson was raised to the rank of viscount, and, indeed, had not the Government dealt out honours to him slowly and by degrees, their stock would long ere that have been exhausted." The grand sea battle in which he saved his country and lost his life has been already described in these pages.

CHAPTER V.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

Early Paddle-boats—Worked by Animal Power—Blasco de Garay's Experiment—Solomon de Caus—David Ramsey's Engines—The Marquis of Worcester—A Horse-boat—Boats worked by Water—By Springs—By Gunpowder—Patrick Miller's Triple Vessel—Double Vessels worked by Capstans—The First Practical Steam-boat—Symington's Engines—The Second Steamer—The *Charlotte Dundas*—American Enterprise—James Rumsey's Oar-boats worked by Steam—Poor Fitch—Before his Age—Robert Fulton—His Torpedo Experiments—Wonderful Submarine Boat—Experiments at Brest and Deal—His first Steam-boat—Breaks in Pieces—Trip of the *Clermont*, the first American Steamer—Opposition to his Vessels—A Pendulum-boat—The first Steam War-ship—Henry Bell's *Comet*.

THE employment of animal power in the propulsion of vessels is of very ancient date, and we shall see that steam-power was proposed for the same purpose as soon as the steam-engine had been utilised for pumping mines, although it was some time before it could be applied practically and profitably. We are told that "in some very ancient manuscripts extant in the King of France's library, it is said that the boats by which

the Roman army under Claudius Caudex was transported into Sicily, were propelled by wheels moved by oxen. And in many old military treatises the substitution of wheels for oars is mentioned.* "Although an old work on China," says another authority,† "contains a sketch of a vessel moved by four paddle-wheels, and used perhaps in the seventh century, the earliest distinct notice of this means of propulsion appears to be by Robertus Vulturius, in A.D. 1172, who gives several wood-cuts representing paddle-wheels."

The first use of steam in connection with the propulsion of vessels is perhaps that said to have been made by Blasco de Garay, in 1543. He had proposed to the Emperor Charles V. the construction of an engine capable of moving large vessels in a calm, and without the use of sails or oars. "In spite of the opposition this project encountered, the emperor consented to witness the experiment, which was accordingly made in the *Trinity*, a vessel of 200 tons, laden with corn, in the port of Barcelona, on the 17th June, 1543. Garay, however, would not uncover his machinery, or exhibit it publicly, but it was evident that it consisted of a cauldron of boiling water (*una gran caldera de agua hirviendo*), and of two wheels set in motion by that means, and applied externally on each side (*banda*) of the vessel.

"The persons commissioned by the emperor to report on the invention seem to have approved it, commending especially the readiness with which the vessel tacked. The Treasurer Ravago, however, observed that a ship with the proposed machinery could not go faster than two leagues in three hours; that the apparatus was complex and expensive; and that there was danger of the boiler bursting. The other commissioners maintained that such a vessel might go at the rate of a league an hour, and would tack in half the time required by an ordinary ship. When the exhibition was over, Garay removed the apparatus from the *Trinity*, depositing the woodwork in the arsenal at Barcelona, but retaining himself the rest of the machinery. Notwithstanding, however, the objections urged by Ravago, the emperor was inclined to favour his project, but his attention at the time was engrossed by other matters. Garay was, however, promoted, and received a sum of money, besides the expenses of the experiment made at Barcelona." The above account is from Spanish sources, supposed to be authentic, till Mr. MacGregor, in 1857, made a journey into Spain for the express purpose of verifying them. The conclusions to which he came were that the paddle-wheels were turned by men.

About this epoch, however, frequent mention is made of means of propulsion other than by sails or oars, and it is evident that men of learning in various places were nearly simultaneously musing and thinking over the matter. J. C. Scaliger (who died 1558) published at Frankfort a short account of a vessel to be propelled without oars. Another inventor‡ a few years later, says quaintly, "And furthermore you may make a boat to goe without oares or sayle, by the placing of certain wheeles on the outside of the boate, in that sort, that the armes of the wheeles may goe into the water, and so

* Robert Stuart, "Historical and Descriptive Anecdotes of Steam-Engines."

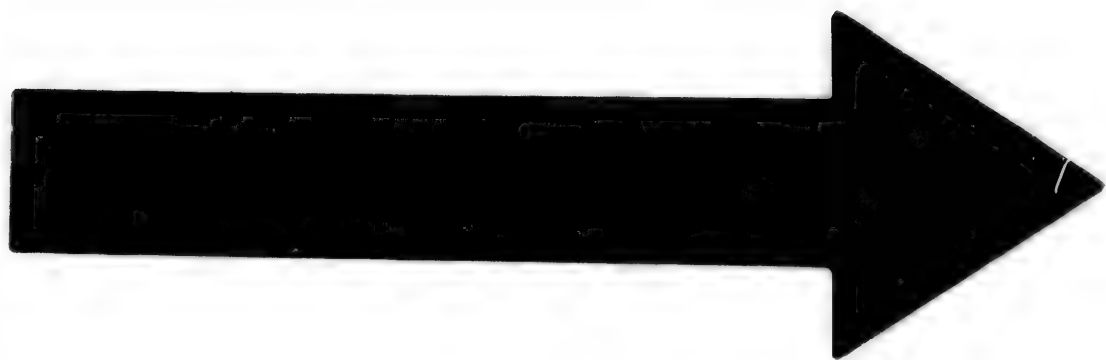
† John MacGregor, in a paper read before the Society of Arts, 14th of April, 1858.

‡ William Bourne, "Inventions or Devises" (1578).

turning the wheeles by some provision, and so the wheeles shall make the boate goe." Bessoni, in 1582, describes a vessel consisting of two hulls decked above,—like the *Castalia* or *Calais-Donveres*—and a wheel worked by ropes and a windlass in the interval between them. Ramelli, in 1588, designed a paddle-wheel flat-bottomed boat, worked by men turning a winch-handle. Indeed, Roger Bacon had, three centuries and a half before, spoken of a "vessel which, being almost wholly submerged, would run through the water against waves and winds with a speed greater than that attained by the fastest London pinnaces."

The power of steam was rapidly becoming understood. In 1601, Baptista Porta (the inventor of the magic-lantern) made many experiments on steam and its condensation, and its relative bulk to water. Rivault shortly after describes the power of steam in bursting a strong bomb-shell, partly filled by water, tightly plugged, and then heated. In 1615, we find Solomon de Caus proving that "water will mount by the help of fire higher than its level;" and Branca, in 1629, applying steam to the vanes of a wheel to make it revolve, as in some toys to-day. In our own country we find David Ramsey, one of the Pages of the King's Bedchamber, obtaining, with a partner, a patent in 1618, "To exercise and put in use *divers newe apt formes or kinds of Engines*, and other profitable Invençions, as well to plough grounds without horse or oxen, and to make fertile as well as barren peats, salts and sea lands, as inland and upland grounds within the Realmes of England, &c. As, also, to raise waters, and to make boats for carriages runnin upon the water as swift in calmes, and more safe in storms, than boats full sayled in great windes." Twelve years later we find Ramsey applying alone for a patent of most comprehensive character. It was designed "*To raise water from lowe pitts by fire* [the steam-engine]. To make any sort of Milles to go on standing Waters by continual moe'on without the helpe of Windes, Weight, or Horse. To make all sortes of Tapestry without any weaving loome or way even yet in use in this kingdom. *To make Boats, Ships, and Barges to goe against the Wind and Tyde, &c.*" And so on through the century. Woodcroft, in his standard work,* enumerates over a dozen more patents having for their object the propulsion of boats and vessels, which were granted before 1700, including one to the celebrated Marquis of Worcester, which, however, did not contemplate the use of steam. In the "Century of Invençions" Lord Worcester says: "By it, I can make a vessel, of as great burden as the river can bear, to go against stream, *which the more rapid it is, the faster it shall advance*, and the moveable part that works it, may be by one man still guided to take advantage of the stream, and yet to steer the boat to any point; and this engine is applicable to any vessel or boat whatsoever, without being, therefore, made on purpose, and worketh these effects:—*it roweth, it draweth, it driveth*, (if needs be) to pass London Bridge against the stream at low water; and a boat laying at anchor, the engine may be used for loading or unloading." Woodcroft explains this as follows: "It is obvious that the Marquis did not, by this, mean a steam-propelled paddle-wheel boat, the action of which would not have been such as he describes; but a rope fastened at one end up the stream, and at the other to the axis of water-wheels laying

* "A Sketch of the Origin and Progress of Steam Navigation," by Bennet Woodcroft.



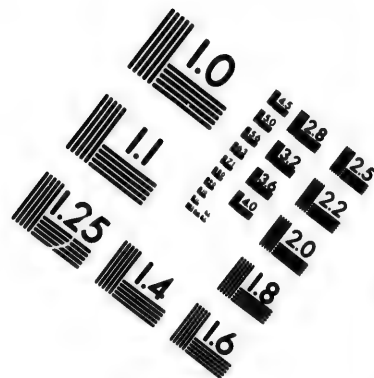
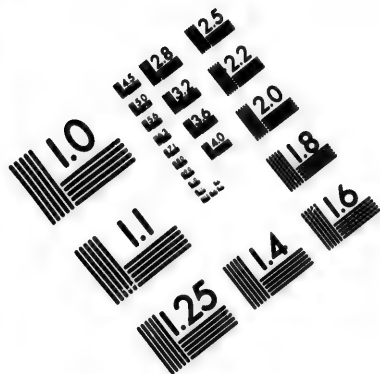
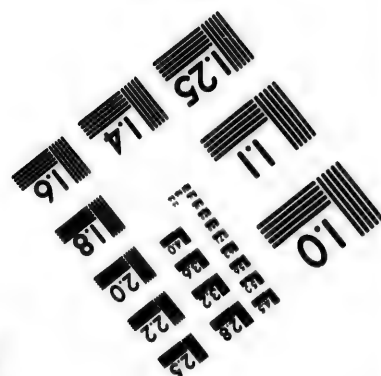
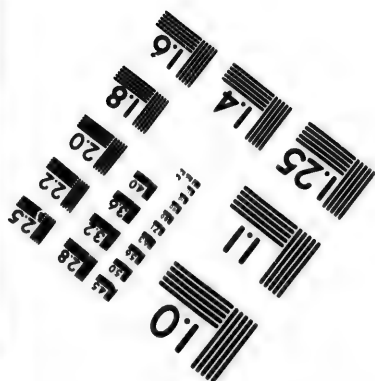
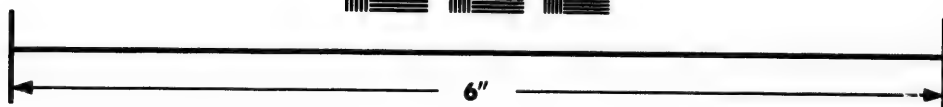
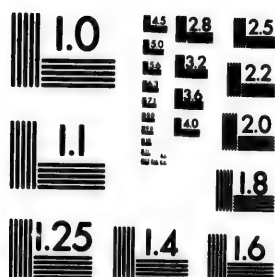


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across the boat, and dipping into the water, so as to be turned by the wheels, would fulfil the conditions proposed of advancing the boat faster, the more rapid the stream; and when at anchor such wheels might have been applied to the other purposes." Floating mills, worked by large water-wheels, may be seen on the Rhine to-day.

Papin, the French philosopher, while in England, witnessed an experiment on the Thames, in which a boat, fitted with revolving oars or paddles, was worked from a kind of treadmill turned round by horses. "The velocity with which this horse-boat was impelled was so great, that it left the king's barge, manned with sixteen rowers, far astern in the race of trial." In 1682, a horse tow vessel was used at Chatham. It was "constructed with a wheel on each side of the vessel, connected by an axle going across the boat, and the paddles were made to revolve by horses moving a wheel turned by a trundle fixed on the axle. It drew but four and a half feet of water, and towed the greatest ships by the help of four, six, or eight horses."

In 1729, Dr. John Allen obtained a patent for his new invention, one which has been revived with some success in later days. It was to propel a vessel by forcing water through the stern, at a convenient distance under the surface of the water, into the sea, by suitable engines on board. "Amongst," says the doctor, "the several and various engines I have invented for this purpose, is one of a very extraordinary nature, whose operation is owing to the explosion of *gunpowder*, I having found out a method of firing gunpowder in vacuo, or in a confined space, whereby I can apply the whole force of it, which is inconceivably great, so as to communicate motion to a great variety of engines, which may also be applied in working mines and other purposes." And again, in 1760, a Swiss clergyman published a pamphlet in London, in which oars worked with springs were to be used, and the expansive power of gunpowder was to be used to bend the springs. He states, candidly enough, that since he arrived in England he had learned that thirty years before a Scotchman had proposed to make a ship proceed by means of gunpowder, but that thirty barrels had scarcely forwarded it ten miles. We may smile at these attempted uses of gunpowder, but they were doubtless suggested by the scientific studies of the day, which were particularly directed to the expansive power of vaporised water. In our own day, steam has been substituted for powder in discharging a cannon. Perkins' "steam-gun" was long one of the curiosities of the Polytechnic Institution.

On the 5th of January, 1769, James Watt obtained a patent for a series of improvements in the steam-engine, one of which was most important in its bearing on naval engines. It was that which provided for steam acting *above* the piston as well as below it, in, of course, the same cylinder. Here was a grand move at once. Previously every engine for pumping, the only practical purpose to which steam was yet put, was worked by a beam engine and pair of cylinders. In 1779, Matthew Wasborough, an engineer of Bristol, obtained a patent, as others, indeed, had before him, for converting a rectilinear into a continuous circular motion. It failed, as the others had done, because they required ratchet wheels, pulleys, &c. The following year James Pickard invented the present connecting-rod and crank, with fly-wheel, and removed the great obstacle to propelling vessels by steam. The following year, again, Watt invented what is now known as the "sun and planet motion," another step in the same direction.

We now approach the name of one of those who are most intimately connected with the history of steam navigation, Patrick Miller of Dalswinton. In 1787 he published a pamphlet* describing a *triple vessel*, propelled by paddle-wheels, and worked by cranks. In it he very distinctly says: "I have also reason to believe that the power of the *steam-engine* may be applied to work the *wheels*, so as to give them a quicker motion, and consequently to increase that of the ship. In the course of this summer I intend to make the experiment," &c. A statement was presented to the Royal Society, Dec. 20th, 1787, regarding experiments made by Mr. Miller in the Firth of Forth, the previous summer, in a *double vessel*, sixty feet long and fourteen and a half feet broad, put in motion by a water-wheel, wrought by a capstan of five bars. On the lower part of the capstan a wheel was fixed, with teeth pointing upwards, to work in a trundle fixed on the axis of the water-wheel. She was worked at from three and a half to five miles an hour, with four or five men at the capstan. Two men propelled her at the rate of two and a half miles.

The vessel was three-masted, and sailed well with a smart breeze, when the wheel was invariably raised above the surface of the water. "After making sundry tacks in the Firth," says the narrator, "with all the sails set, the wind fell to a gentle breeze, when all the sails were taken in, and the following experiments made:—

"The vessel being put in motion by the water-wheel, wrought by five men at the capstern (*sic*) was steered so as to keep the wind right ahead, and her going was found by the log to be three and a half miles in the hour.

"After this the wind was brought on the beam (that situation being considered as the nearest to trying the effect of the wheel in a calm), when five men at the capstern made the vessel to go at the rate of four miles an hour.

"With the wind brought on the quarter, five men caused her to go at the rate of four and a half miles an hour," &c.

And so it goes on. Miller made some very distinct statements as to the distance the different vessels should be placed from each other, and further states that the objection that the sea would separate the different bottoms is not well founded, "top weight not being detrimental to these ships in point of stiffness, all the beams on the different decks may be of the same size; and the strength of these united must be very superior to any weight or force which can operate against it when the ship is afloat, however agitated or high the sea may be." These early experiments are particularly interesting now, when the *Calais-Douvres*, a vessel which must be described hereafter, has proved a success.

Mr. James Taylor may also be considered as one of the authors or inventors of the present system of steam navigation. In a memorial laid before a Select Committee of the House of Commons in 1824, he says:—

"Before, however, entering upon the main object, permit me to introduce it by a short statement explanatory of my connection with Mr. Miller. In the autumn of 1785, I went to live in Mr. Miller's house as preceptor to his two younger sons. I found him a gentleman of great patriotism, generosity, and philanthropy, and at the same time of a

* This brochure is extremely scarce. The curious in such matters will find it reprinted in full in Woodcroft's "Sketch of the Origin and Progress of Steam Navigation."

very speculative turn of mind. Before I knew him he had gone through a very long and expensive course of experiments upon artillery, of which the carronade was the result. When I came to know him he was engaged in experiments upon shipping, and had built several (ships or vessels) upon different constructions, and of various magnitudes. The double vessel seemed to fix his attention most. In the summer of 1786 I attended him repeatedly in his experiments at Leith, which I then viewed as parties of pleasure and amusement. But in the spring of 1787 a circumstance occurred which gave me a different opinion. Mr. Miller had engaged in a sailing match with some gentlemen at Leith, against a Custom House boat (a wherry), which was reckoned a first-rate sailer. A day was appointed, and I attended Mr. Miller. His was a double vessel, sixty feet deck, propelled by two wheels, turned by two men each. * * * Being then young and stout, I took my share of the labours of the wheels, which I found very severe exercise, but it satisfied me that a proper power only was wanting to produce much utility from the invention." This led to long and interesting discussions on the subject, and Miller explained that his principal object was to enable vessels to avoid or extricate themselves from dangerous situations, and also give them powers of motion during calms. He asked Mr. Taylor to give him the benefit of his brains. At last the latter told him that he could suggest no power equal to the steam-engine. The question then became how to apply it. Taylor made sketches according to his ideas, and Mr. Miller then said, "Well, when we go to Edinburgh we will apply to an operative engineer, and take an estimate for a small engine, and if it is not a large sum, we will set about it; but as I am a stranger to the steam-engine, you shall take charge of that part of the business, and we will try what we can make of it.

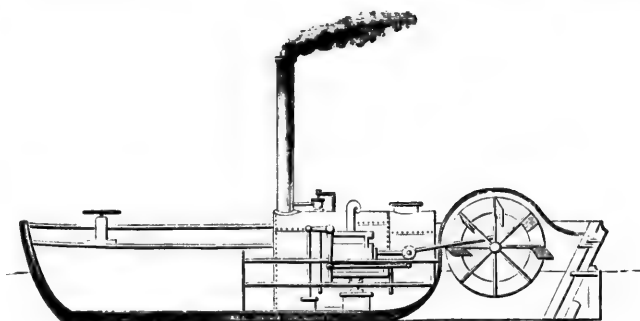
"At this time William Symington, a young man employed at the lead mines at Wanlockhead, had invented a new construction of the steam-engine, by throwing off the air-pump. I had seen a model work, and was pleased with it, and thought it very answerable for Mr. Miller's purpose. Symington had come into Edinburgh that winter for education. Being acquainted with him, I informed him of Mr. Miller's intentions and mine, and asked if he could undertake to apply his engine to Mr. Miller's vessels, and if he could I would recommend him. He answered in the affirmative, and from friendship I recommended both himself and engine, and afterwards introduced him to Mr. Miller. After some conversation, Symington engaged to perform the work, and Mr. Miller agreed to employ him. It was finally arranged that the experiment should be performed on the lake at Dalswinton, in the ensuing summer (1788). Accordingly in the spring, after the classes of the College broke up, I remained in town to superintend the castings, &c., which were done in brass, by George Watt, founder, back of Shakspear Square. When they were finished I sent the articles to the country, and followed myself. After some interval I took Symington with me to Dalswinton to put the parts together. This was accomplished about the beginning of October, and the engine, mounted in a frame, was placed upon the deck of a very handsome double pleasure-boat, upon the lake. We then proceeded to action, and a more complete, successful, and beautiful experiment was never made by any man at any time, either in art or science. The vessel moved delightfully, and notwithstanding the smallness of the cylinders (four

inches diameter), at the rate of five miles an hour. After amusing ourselves a few days, the engine was removed, and carried into the house, where it remained as a piece of ornamental furniture for a number of years." The vessel was 25 feet long and 7 broad. Thus was steam navigation inaugurated! How few of the readers of the *Dumfries Newspaper*, the *Edinburgh Advertiser*, or the *Scots' Magazine*, when reading the brief account printed in their columns, dreamt of the revolution which this interesting and successful little experiment involved. The latter could not see farther than its utility in canals, and other inland navigation. The *Annual Register* for the year does not even mention it.

It was now agreed to repeat the experiment. A double engine with eighteen-inch cylinder was constructed at Carron under Symington's directions. In November, 1789, she was tried on the Forth and Clyde Canal. "After passing Lock 16," says Taylor, we proceeded cautiously and pleasantly for some time, but after giving the engine full play the arms of the wheels, which had been constructed too slight, began to give way, and one float after another broke off, till we were satisfied no accuracy could be attained in the experiment until the wheels were replaced by new ones of a stronger construction. This was done with all possible speed, and upon the 26th December, we again proceeded to action. This day we moved freely without accident, and were much gratified to find our motion nearly seven miles per hour. Next day we repeated the experiment with the same success and pleasure. Satisfied now that everything proposed was accomplished, it was unnecessary to dwell longer upon the business; for, indeed, both this and the experiment of last year were as complete as any performance made by steam-boats, even to the present day." Mr. Miller, who paid all the expenses of these steam experiments, did not pursue them further, and it is to be regretted, inasmuch as his name has not been so popularly associated with the infancy of steam navigation as could be wished. He was an enthusiast in many branches of practical science, and seems latterly to have given his mind more particularly to improvements in agriculture. Mr. Taylor's connection with steam-boat experiments ceased with those of the second boat in 1789. "And it is clear," says Woodcroft, "from his own statement and those of his friends, that he was neither the inventor of the machinery by which either of those boats was driven, nor of the mode of connecting the engines to the boat and wheels." His widow received a small pension from Government, and in 1837 each of his four daughters received a gift of £50 for their father's connection with the experiments. Miller sought no pecuniary aid or reward of any kind; and, although he devoted his time and talents, and expended nearly £30,000 of his own fortune in the improvement of artillery and naval architecture, his services were wholly overlooked by the powers that were. Mr. Woodcroft has very clearly shown that Miller, in spite of the apparent success of the experiments, had not great faith in Symington's machinery, which he describes in a letter "as the most improper of all steam-engines for giving motion to a vessel." We find him much later describing, in a patent specification, a new form of flat boat, with centre-boards and paddle-wheels, still worked by his favourite capstans.

More than ten years elapsed before Symington, the builder of Miller's engines, found another patron. In 1801, Thomas, first Lord Dundas, employed him to fit up a

steam-boat for the Forth and Clyde Canal Company, in which he was a large shareholder. "Having," says Lindsay,* "availed himself of the many improvements made by Watt and others, Symington patented his new engine on the 14th of March of that year, and fitting it on board the *Charlotte Dundas*, named after his lordship's daughter, produced, in the opinion of most writers who have carefully and impartially inquired into this interesting subject, 'the first practical steam-boat.'" In March, 1802, the *Charlotte Dundas* made her trial trip on the canal. It was in one sense a fortunate day for the experiment, for a gale of wind blew, and no other vessel attempted to move to windward. The little steamer, towing two barges of seventy tons burden, accomplished the trip to Port Dundas, Glasgow, a distance of $19\frac{1}{2}$ miles, in six hours, or at the rate of $3\frac{1}{4}$ miles per hour. Lord Dundas, who was on board, thought favourably of the experiment, and in a letter of introduction to the Duke of Bridgewater, recommended Symington's new engine to his notice. His grace almost immediately gave him an order to construct eight vessels similar to the



THE "CHARLOTTE DUNDAS."

Charlotte Dundas, and the struggling engineer naturally thought that his fortune was made. Alas! before the arrangements could be consummated the duke died, and the committee who had charge of the canal after his decease, came to the conclusion that the wash from steam-boats would injure its banks. Woodcroft considers that "this vessel might, from the simplicity of its machinery, have been at work to this day with such ordinary repairs as are now occasionally required for all steam-boats," and claims that to Symington belonged "the undoubted merit of having combined for the first time those improvements which constitute the present system of steam navigation." The success of the engine consisted in this: that, "after placing in a boat a double-acting reciprocating engine, he attached his crank to the axis of the paddle-wheel," a combination on which there has been no improvement to the present day, as rotatory motion is secured without the interposition of a lever or beam. So much for the engine, but how about the poor engineer? This boat was laid up in a creek of the canal, where she remained for many years exposed as a curiosity, and perhaps also as a warning to ambitious speculators. Symington's means were nearly exhausted, and after having had to fight Taylor at law in regard to some of

* "History of Merchant Shipping," &c.

the minor inventions employed, we find him in 1825 receiving the miserable gift of £100 from the Privy Purse, and later, a further sum of £50. What a return for labours which so distinctly led to our present system of steam navigation!

In 1797, an experiment which took place in the neighbourhood of Liverpool is recorded in the *Monthly Magazine*, on oars worked by steam; the engine made eighteen strokes per minute, and propelled a vessel, heavily laden with copper slag, through the Sankey Canal. The claims of other countries have also been put forth, but the first attempts at



SYMINGTON.

practical steam navigation belong to Scotland, and, as we shall see, were improved to such an extent in America, that to that country belongs the credit of having first organised a steam-boat line for continuous and paying traffic.

The Americans had at an early period turned their attention to new modes of propelling vessels. As early as 1784, James Rumsey proposed to General Washington a project of steam navigation, but having been refused a patent in Pennsylvania, came to England, and succeeded in inducing a wealthy countryman of his own, then in London, and others to disburse the expenses of an experiment, for which he afterwards obtained a patent. In this also oars were worked by steam. A couple of years later, Fitch obtained from the States of Pennsylvania and New York the exclusive right to run steamers on their waters, and is said to have attained with one of his vessels the rate of four or five miles an hour

against the current of the Potomac. In 1787 he built another vessel, 12 feet beam and 45 feet long, with a 12-inch cylinder, which progressed at the rate of seven miles an hour. In 1790 he completed another and larger boat, which was advertised and used for a time as a regular passenger boat on the Delaware. The oars or paddles were worked from the stern.

Poor Fitch! He, in common with many others of the day who did and did not give their ideas to the world, was on the right track, but could not put them into practical and practicable shape. He was really a man of remarkable genius. The son of a Connecticut farmer, he had been apprenticed to a watch and clock maker, where doubtless he increased his knowledge of the mechanical arts. During the early part of the Revolutionary War, he was armourer to the State of New Jersey, and later, became a land surveyor. While acting in that capacity, the idea first suggested itself to him, as it did almost simultaneously to Symington in Scotland, of propelling carriages by steam, but he soon abandoned it on account of the roughness of the American roads. After that he turned his attention almost exclusively to the propulsion of vessels by steam, visiting England and France, but obtaining no pecuniary advantage from the experiments he proposed or consummated. In a sketch of his life, which appeared a few years since,* the writer describes Fitch's difficulties in raising the money to finish his second steam-boat: "In a letter to David Roltenhouse, when asking an advance of £50 to finish the boat, he says, 'This, sir, whether I bring it to perfection or not, will be the mode of crossing the Atlantic for packets and armed vessels.' But everything failed, and the poor projector loitered about the city for some months, a despised, unfortunate, heart-broken man. 'Often have I seen him,' said Thomas P. Cope, many years afterwards, 'stalking about like a troubled spectre, with downcast eyes and lowering countenance, his coarse soiled linen peeping through the elbows of a tattered garment.' Speaking of a visit he once paid to John Wilson, his boat-builder, and Peter Brown, his blacksmith, in which, as usual, he held forth upon his hobby, Mr. Cope says: 'After indulging himself for some time in this never-failing topic of deep excitement, he concluded with these memorable words: 'Well, gentlemen, although I shall not live to see the time, you will, when steam-boats will be preferred to all other means of conveyance, and especially for passengers; and they will be particularly useful in the navigation of the river Mississippi.' He then retired, on which Brown, turning to Wilson, exclaimed, in a tone of deep sympathy, 'Poor fellow! what a pity he is crazy!'" Fitch, reduced to utter poverty and despair, threw himself into the Alleghany in 1798, and thus terminated his chequered life.

The experiments of John Cox Stevens, of New York, were not particularly successful, although made at an expense of some 20,000 dollars. His vessel was a "stern-wheeler," similar to those common enough on many American rivers to-day. But he deserves the credit, apparently, of having been the first to practically apply a tubular boiler to marine engines. His boiler, only 2 feet long by 15 inches wide and 12 inches high, consisted of no less than 41 copper tubes, each an inch in diameter. While Fitch and Stevens were experimenting, another American citizen, Oliver Evans, was endeavouring to mature a

* *Philadelphia Dispatch*, February 9th, 1873.

plan for using steam at a very high pressure, to be employed in propelling road wagons, and in an account of his plans, which he published in 1786, he suggests a mode of propelling vessels by steam. "He states," says Lindsay, "that in 1785 he placed his engine, used to clean docks, in a boat upon wheels, the combined weight being equal to 200 barrels of flour, which he transported down to the water, and when it was launched he fixed a paddle-wheel to the stern, and drove it down the Schuylkill to Delaware, and up the Delaware to the city, 'leaving all the vessels going up behind, one at least half-way, the wind being ahead.'" In 1794 and 1797 one Samuel Morey, of Connecticut, is said to have built two steamers, which were publicly exhibited and made passages, but which do not appear to have been afterwards employed. It is to Robert Fulton, who all this time was working at naval applications of many kinds, that not merely America, but the whole world owes the practical and continuous use of steam-vessels. He and his associates started the first paying line of steam-boats.

The life of this remarkable man is little known in England, and not generally even in his own country. Pursuing then the plan which has guided the writer throughout this work, he proposes to give it, for these very reasons, in fuller detail than has been usual with better known examples of patient and struggling inventors.

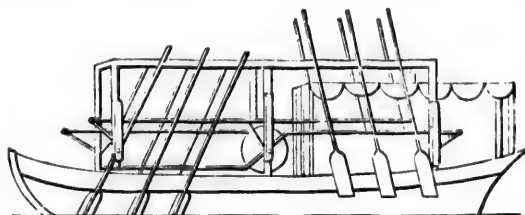
Robert Fulton was born in the year 1765, in the village of Little Britain, Pennsylvania, of respectable, but not wealthy, parents. From his earliest years he showed a great aptitude for the study of the mechanical arts, and, indeed, for the fine arts also. So marked was his progress in drawing and painting, that he was recommended to go to England and study art seriously. This at length he did, and for several years we find him an inmate of Benjamin West's house. Most readers will remember that West, although he spent the larger part of his life in England, and made his great successes there, was by birth American. Fulton afterwards lived in Devonshire and other parts of England, and practised art for a time, while his brain was busy with schemes for improving inland navigation by the construction of canals, with new forms of bridges and aqueducts. Next we find him in France living with the family of one of his countrymen, Joel Barlow; during this period he painted a panorama, which was a great success. In 1797 he experimented with carcasses of gunpowder—practically torpedoes—under water, and was engaged in perfecting a wonderful submarine boat. The French and Dutch Governments gave him some little encouragement, so far as fair words were concerned, and he wasted a considerable amount of time in hanging about public offices, to be eventually disappointed, for his plans were rejected.

But the French Government changed. Bonaparte placed himself at the head of it, with the title of First Consul. Mr. Fulton soon presented an address to him, soliciting him to patronise the project for submarine navigation, and praying him to appoint a commission with sufficient funds and powers to give the necessary assistance. This request was immediately granted, and the citizens Volney, La Place, and Monge were named the commissioners. In the spring of the year 1801, Mr. Fulton repaired to Brest, to make experiments with the plunging-boat he had constructed the previous winter. This, so he says, had many imperfections, natural to a first machine of such complicated combinations; added to this, it had suffered much injury from rust in consequence of his having been

obliged to use iron instead of brass or copper for bolts and arbours. Notwithstanding these disadvantages, he engaged in a course of experiments with the machine, which required no less courage than energy and perseverance. Of his proceedings he made a report to the committee appointed by the French executive, from which report we learn the following interesting facts:—

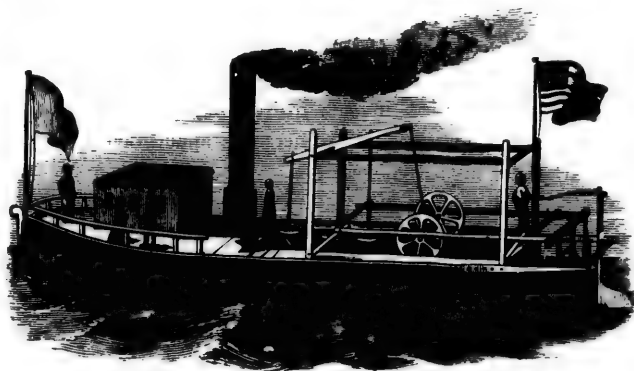
“On the 3rd July, 1801, he embarked with three companions on board his plunging-boat in the harbour of Brest, and descended in it to the depth of five, ten, fifteen, and so to twenty-five feet; but he did not attempt to go lower, because he found that his imperfect machine would not bear the pressure of a greater depth. He remained below the surface one hour. During this time they were in utter darkness. Afterwards, he descended with candles; but, finding a great disadvantage from their consumption of vital air, he caused, previously to his next experiment, a small window of thick glass to be made near the bow of his boat, and he again descended with her, on the 24th July, 1801. He found that he received from his window, or rather aperture covered with glass, for it was no more than an inch and a half in diameter, sufficient light to enable him to count the minutes on his watch. Having satisfied himself that he could have sufficient light when under water, that he could do without a supply of fresh air for a considerable time, that he could descend to any depth, and rise to the surface with facility, his next object was to try her movements as well on the surface as beneath it. On the 26th July he weighed his anchor and hoisted his sails; his boat had one mast, a tail, and a jib. There was only a light breeze, and, therefore, she did not move at the surface at more than the rate of two miles an hour, but it was found that she would tack and steer, and sail on a wind or before it, as well as any common sailing-boat. He then struck her mast and sails; to do which, and perfectly to prepare the boat for plunging, required about two minutes. Having plunged to a certain depth, he placed two men at the engine, which was intended to give her progressive motion, and one at the helm, while he, with a barometer before him, governed the machine which kept her balanced between the upper and lower waters. He found that with the exertion of one hand only, he could keep her at any depth he pleased. The propelling engine was then put in motion, and he found, upon coming to the surface, that he had made, in about seven minutes, a progress of four hundred meters, or about five hundred yards. He then again plunged, turned her round while under water, and returned to near the place he began to move from. He repeated his experiments several days successively, until he became familiar with the operations of the machinery and the movements of the boat. He found that she was as obedient to her helm under water as any boat could be on the surface; and that the magnetic needle traversed as well in the one situation as in the other. On the 7th August, Mr. Fulton again descended with a store of atmospheric air compressed into a copper globe of a cubic foot capacity, into which two hundred atmospheres were forced. Thus prepared, he descended with three companions to the depth of about five feet. At the expiration of an hour and forty minutes, he began to take small supplies of *pure* air from his reservoir, and did so, as he found occasion, for four hours and twenty minutes. At the expiration of this time he came to the surface, without having experienced any inconvenience from having been so long under water.”

Fulton's boat is pretty evidently the original from which Jules Verne took the idea of his wonderful submarine ship, the *Nautilus*. It was utilised for an important torpedo experiment, and a shallop was successfully blown up at Brest in the presence of Admiral Villaret and other officials. The submarine boat approached within two hundred yards of the hull which



OUTLINE OF FITCH'S FIRST BOAT.

was to be destroyed, and fired its torpedo under water. The French Government employed him for a time to cruise about and watch our vessels, but no opportunity seems to have occurred for any attack, and he was evidently looked upon as a failure. In 1803, a correspondence passed between the English Government and Fulton, and he was induced



FITCH'S SECOND BOAT.

to come to London, where he had an interview with Mr. Pitt and Lord Melville. "When Mr. Pitt first saw a drawing of a torpedo, with a sketch of the mode of applying it, and understood what would be the effects of its explosion, he said, that if introduced into practice, it could not fail to annihilate all military marines." Fulton accompanied an expedition sent against the French flotilla in the roads of Boulogne, where his torpedoes were launched, but did no damage.

On the 15th October, 1805, he blew up a strongly built Danish brig, of the burden of 200 tons, which had been provided for the experiment, and which was anchored in Walmer roads, near Deal, within a mile of Walmer Castle, the then residence of Mr. Pitt.

He has given an interesting account of this experiment in a pamphlet which he published in this country, under the title of "Torpedo War." In a letter to Lord Castlereagh, of the 10th October, 1805, he says, "Yesterday, about four o'clock, I made the intended experiment on the brig, with a carcass of one hundred and seventy pounds of powder; and I have the pleasure to inform you that it succeeded beyond my most sanguine expectations. Exactly in fifteen minutes from the time of drawing the peg and throwing the carcass into the water, the explosion took place. It lifted the brig almost bodily, and broke her completely in two. The ends sunk immediately, and in one minute nothing was to be seen of her but floating fragments. Her mainmast and pumps were thrown in the sea; her foremast was broken in three pieces; her beams and knees were thrown from her deck and sides, and her deck planks were rent to fibres. In fact, her annihilation was complete, and the effect was most extraordinary. The power, as I had calculated, passed in a right line through her body, that being the line of least resistance, and carried all before it. At the time of her going up she did not appear to make more resistance than a bag of feathers, and went to pieces like a shattered egg-shell."

Notwithstanding the complete success of the experiment, the British ministry seem to have been but little disposed to have anything further to do with Mr. Fulton and his projects. Indeed, the evidence it afforded of their efficiency may have been a reason for this. However Mr. Pitt and Lord Melville may have thought on the subject, there had been a change in the administration, and the new ministers probably agreed with the Earl St. Vincent, that it was great folly in them to encourage a project which, if it succeeded, would revolutionise all maritime questions. Lord Grenville and his Cabinet were not only indisposed to encourage Mr. Fulton, but they were unwilling to fulfil the engagements which their predecessors had made, and that inventor, after some further experiments, of which we have no particular account, wearied with incessant applications, disappointments, and neglect, at length embarked for his native country.

But Fulton's greatest fame rests on his steam-boats. In his first attempt made in France, where he was aided by Mr. Robert R. Livingston, a fellow-countryman, he was not successful. Their experimental boat was completed early in the spring of 1803; they were on the point of making an experiment with her, when one morning, as Mr. Fulton was rising from a bed in which anxiety had given him but little rest, a messenger from the boat, whose precipitation and apparent consternation announced that he was the bearer of bad tidings, presented himself to him, and exclaimed in accents of despair, "Oh, sir, the boat has broken to pieces and gone to the bottom!" Mr. Fulton, who himself related the anecdote, declared that the news created a despondency which he had never felt on any other occasion; but this was only a momentary sensation. Upon examination, he found the boat had been too weakly framed to bear the great weight of the machinery, and that, in consequence of an agitation of the river by wind the preceding night, what the messenger had represented had literally happened. The boat had broken in two, and the weight of her machinery had carried her fragments to the bottom. It appeared to him, as he said, that the fruits of so many months' labour, and so much expense, were annihilated, and an opportunity of demonstrating the efficiency of his plan was denied him at the moment he had promised it should be displayed. His disappointment and feelings may easily be imagined, but they did not check his

perseverance. On the very day that this misfortune happened, he commenced repairing it. He did not sit down idly to repine at misfortunes which his manly exertions might remedy, or waste in fruitless lamentations a moment of that time in which the accident might be repaired. Without returning to his lodgings, he immediately began to labour with his own hands to raise the boat, and worked for four and twenty hours incessantly, without allowing himself rest or refreshment; an imprudence which, as he always supposed, had a permanently bad effect on his constitution, and to which he imputed much of his subsequent ill health.

The accident did the machinery very little injury; but they were obliged to build the boat almost entirely anew. She was completed in July; her length was sixty-six feet, and she was eight feet wide. Early in August, Mr. Fulton addressed a letter to the French National Institute, inviting them to witness a trial of his boat, which was made in their presence, and in the presence of a great multitude of the Parisians. The experiment was entirely satisfactory to Mr. Fulton, though the boat did not move altogether with as much speed as he expected. But he imputed her moving so slowly to the extremely defective fabrication of the machinery, and to imperfections which were to be expected in the first experiment with so complicated a machine, but which he saw might be easily remedied. Such entire confidence did he acquire from this experiment, that immediately afterwards he wrote to Messrs. Watt and Boulton, of Birmingham, ordering certain parts of a steam-engine to be made for him and sent to America. He did not disclose to them for what purpose the engine was intended, but his directions were such as would produce the parts of an engine that might be put together within a compass suited to a boat. Mr. Fulton then designed to return to America immediately; but, as we have seen, he first visited England, and it is probable that he then gave new orders on this subject, as we find that the engine which was employed in the first American Fulton boat was of the manufacture of Messrs. Watt and Boulton, but it did not arrive in America till long after the time of which we are speaking.

Mr. Livingston also wrote immediately after this experiment to his friends in America, and through their interference, an Act was passed by the Legislature of the State of New York, on the 5th of April, 1803, by which the rights and exclusive privileges of navigating all the waters of that State, by vessels propelled by fire or steam, granted to Mr. Livingston by the Act of 1798, were extended to Mr. Livingston and Mr. Fulton for the term of twenty years from the date of the new Act. By this law, the time for producing proof of the practicability of propelling by steam a boat of twenty tons' capacity, at the rate of four miles an hour, with wind against the ordinary current of the Hudson River, was extended for a period of two years. And by a subsequent law the time was enlarged to April, 1807.

Very soon after Mr. Fulton's arrival in New York he commenced building the first American boat. While she was constructing, he found that her expenses would greatly exceed his calculation. He endeavoured to lessen the pressure on his own finances by offering one-third of the exclusive right which was secured to him and Mr. Livingston by the laws of New York, and of his patent rights, for a proportionate contribution to the expense. He made this offer to several gentlemen, and it was very generally known that

he had made such propositions; but no one was then willing to afford this aid to his enterprise.

"In the spring of 1807, the first Fulton boat built in America was launched from the ship-yards of Charles Brown, on the East River. The engine from England was put on board of her; in August she was completed, and was moved by her machinery from her birth-place to the Jersey shore. Mr. Livingston and Mr. Fulton had invited many of their friends to witness the first trial. Nothing could exceed the surprise and admiration of all who witnessed the experiment. The minds of the most incredulous were changed in a few minutes. Before the boat had made the progress of a quarter of a mile, the greatest unbeliever must have been converted. The man who, while he looked on the expensive machine, thanked his stars that he had more wisdom than to waste his money on such idle schemes, changed the expression of his features as the boat moved from the wharf and gained her speed; his complacent smile gradually stiffened into an expression of wonder. The jeers of the ignorant, who had neither sense nor feeling enough to suppress their contemptuous ridicule and rude jokes, were silenced for a moment by a vulgar astonishment, which deprived them of the power of utterance, till the triumph of genius extorted from the incredulous multitude which crowded the shores shouts and exclamations of congratulation and applause."

There can be no doubt that Fulton derived his general plan from the experiments of Symington. While that engineer was conducting his experiments under the patronage of Lord Dundas, a stranger came to the banks of the Forth and Clyde Canal and requested an interview, announcing himself as Mr. Fulton, of the United States, whither he intended to return, and expressing a desire to see Mr. Symington's boat and machinery, and to procure some information of the principles on which it was moved, before he left Europe. He remarked that, however beneficial the invention might be to Great Britain, it would be of more importance to North America, considering the numerous navigable rivers and lakes of that continent, and the facility for procuring timber for building vessels and supplying them with fuel; that the usefulness of steam-vessels in a mercantile point of view could not fail to attract the attention of every observer; and that, if he were allowed to carry the plan to the United States, it would be advantageous to Mr. Symington, as, if his engagements would permit, the constructing or superintending the construction of such vessels would naturally devolve upon him. Mr. Symington, in compliance with the stranger's request, caused the engine-fire to be lighted, and the machinery put in motion. Several persons entered the boat, and along with Mr. Fulton were carried from where she then lay to Lock No. 16 on the Forth and Clyde Canal, about four miles west, and returned to the starting-place in one hour and twenty minutes, being at the rate of six miles an hour, to the astonishment of Mr. Fulton and the other gentlemen. Mr. Fulton obtained leave to take notes and sketches regarding the boat and engine, "but he never afterwards communicated with Mr. Symington."* He, it has been shown, almost immediately afterwards ordered a marine engine from Messrs. Boulton and Watt, of Soho, near Birmingham. This engine reached America before the *Clermont*, which had

* *Vide* "Bowie on Steam Navigation;" and the works of Lindsay and Woodcroft, already quoted.

been constructed at the instance of Fulton and Livingston, had been launched from the yard of Charles Brown, on the East (Hudson) River. She was decked for a short distance only, at stem and stern, her engines being open to view, while a house on deck, and over the boiler, accommodated passengers and crew. *The boiler was set in masonry.* Her engine was of almost identical size to that of the *Charlotte Dundas*. It is right to add that Fulton claimed no patent or privilege for this engine, which was so evidently founded on that of Symington. Her hull was quite as distinctly his own design, and was vastly superior in build to the Scotch vessel. The first trip of the *Clermont* was from New York to Clermont, the seat of Mr. Livingston, returning to Albany, and the average speed was five miles per hour.



THE "CLERMONT."

"The *Clermont*, on her first voyage, arrived at her destination without any accident. She excited the astonishment of the inhabitants of the shores of the Hudson, many of whom had not heard even of an engine, much less of a steam-boat. There were many descriptions of the effects of her first appearance upon the people on the banks of the river; some of those were ridiculous, but some of them were of such a character as nothing but an object of real grandeur could have excited. She was described by some who had indistinctly seen her passing in the night, to those who had not had a view of her, as a monster moving on the waters, defying the winds and tide, and breathing flames and smoke. She had the most terrific appearance from other vessels which were navigating the river when she was making her passage. The first steam-boats, as others yet do, used dry pine-wood for fuel, which sends forth a column of ignited vapour many feet above the flue, and whenever the fire is stirred a galaxy of sparks fly off, and in the night have a very brilliant and beautiful appearance. This uncommon light first attracted the attention of the crews of other vessels. Notwithstanding the wind and tide were adverse to its approach, they saw with astonishment that it was rapidly coming towards them; and when it came so near as that the noise of the machinery and paddles was heard, the crews (if what was said in the newspapers of the time be true), in some instances,

shrunk beneath their decks from the terrific sight, and left their vessels to go on shore, while others prostrated themselves, and besought Providence to protect them from the approaches of the horrible monster which was marching on the tides and lighting its path by the fires which it vomited."

The *Clermont* was soon afterwards lengthened and considerably improved in appearance and usefulness. Her hull was covered from stem to stern with a flush deck, beneath which two cabins were formed, surrounded by double ranges of berths, and fitted up with great regard to comfort. Her dimensions now were—length, 130 feet; breadth, 16½ feet; diameter of paddle-wheels, 15 feet, the paddles dipping into the water 2 feet. Fulton afterwards built a number of steam-boats, and, it will be well understood, encountered a vast deal of opposition from the owners of sailing craft and ferry-boats. Attempts were also made to put forward rival inventions, and a company was started who proposed to navigate boats on the Hudson by the following somewhat incomprehensible mode of propulsion. The quotation is from the biography of Fulton* by his friend, C. D. Colden:—

"The opposition boats on the Hudson, which the owners had built to rival the steam-boats, were at first to have been propelled by a pendulum, which, according to the calculations of some ingenious gentlemen, would give a greater power than steam, but when their boat came to be put in the water they soon found that their wheels, which were turned with great facility and velocity while their vessel was on the stocks, could not be made to perform their functions without the application of a great power to the pendulum. The projectors were utterly at a loss to account for so extraordinary a phenomenon, and could not conceive why the wheels, which had moved so much to their satisfaction when they were resisted only by the air, should require so much force when they turned in the water, and were to drag the weight of the vessel. But having by actual experiment determined that a pendulum would not supply the place of steam, and knowing no other way of supplying steam than that which they saw practised in the Fulton boats, they adopted all their machinery with some very insignificant alterations, which were made with no other view than to give those persons who had set out by professing to make a pendulum-boat a pretence for claiming to be the inventors of improvements in steam-boats."

Fulton, without doubt, designed and superintended the construction of the first steam war-vessel. On the 20th June, 1814, the keel was laid, and in little more than four months, that is, on the 29th October, she was launched from the yard of Adam and Noah Brown, her able and active architects. The scene exhibited on that occasion was magnificent. It happened on one of the brightest autumnal days. "Spectators," says Colden, "crowded the surrounding shores, and were seen upon the hills which limited the beautiful prospect. The river and bay were filled with vessels of war, dressed in all their variety of colours, in compliment to the occasion. In the midst of these was the enormous floating mass whose bulk and unwieldy form seemed to render her as unfit for motion as the land batteries which were saluting her. Through the fleet of vessels which occupied this part of the harbour were seen gliding in every direction several of our large steam-boats, of the burden of three or four hundred tons. These, with bands of music, and crowds of gay and

* "The Life of R. Fulton" is an American work, and so little known in England, that the present writer has intentionally made the above copious extracts from it.

joyous company, were winding through passages left by the anchored vessels as if they were moved by enchantment. The heart could not have been human that did not share in the general enthusiasm expressed by the loud shouts of the multitude. He could not have been a worthy citizen, who did not then say to himself, with pride and exultation, 'This is my country!' and when he looked on the man whose single genius had created the most interesting objects of the scene, 'This is my countryman!'"

By May, 1815, her engine was put on board, and she was so far completed as to afford an opportunity of trying her machinery. But, unhappily, before this period the mind that had conceived and combined it was gone. Fulton, almost to the last day of his life, worked incessantly at this, the first steam war-vessel.

On the 4th July, in the same year, the steam frigate made a passage from New York to the ocean and back, and went the distance—which, going and returning, is fifty-three miles—in eight hours and twenty minutes, by the mere force of her engine. These trials suggested the correction of some errors, and the supplying of some defects in the machinery. In September she made another passage to the sea, and having at this time the weight of her whole armament on board, she went at an average of five and a half miles an hour, with and against tide. When stemming the tide, which ran at the rate of three miles an hour, she advanced at the rate of two and a half miles an hour.

We now reach the period which brings us to practical steam navigation in Europe. In January, 1812, Henry Bell, of Helensburgh, Scotland, completed the construction of a small passenger steam vessel, the *Comet*, of thirty tons burden. She was only forty feet in length, with an engine of three-horse power. The circular which announced its regular trips is worth reprinting, as it is the first advertisement of the kind made in all Europe. It reads as follows:—

"STEAM PASSAGE BOAT, THE *COMET*, BETWEEN GLASGOW, GREENOCK, AND HELENSBURGH, FOR PASSENGERS ONLY.

"The Subscriber having, at much expense, fitted up a handsome vessel to ply upon the river Clyde, between Glasgow and Greenock, to sail by the power of wind, air and steam, he intends that the vessel shall leave the Broomielaw on Tuesdays, Thursdays, and Saturdays about mid-day, or at such hour thereafter as may answer from the state of the tide; and to leave Greenock on Mondays, Wednesdays, and Fridays in the morning, to suit the tide.

"The elegance, comfort, safety, and speed of this vessel requires only to be proved to meet the approbation of the public; and the proprietor is determined to do everything in his power to merit public encouragement.

"The terms are for the present fixed at four shillings for the best cabin, and three shillings for the second, but beyond these rates nothing is to be allowed to servants or any other person employed about the vessel.

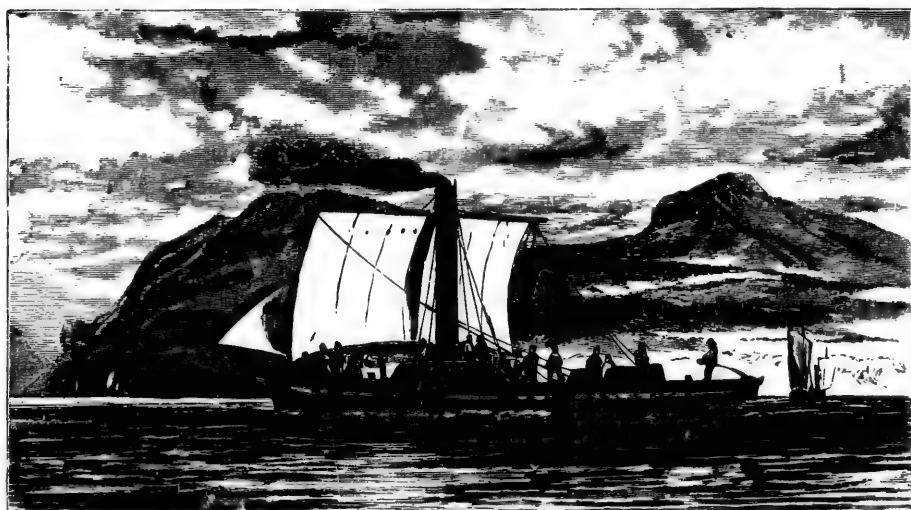
"The Subscriber continues his establishment at Helensburgh Baths, the same as for years past, and a vessel will be in readiness to convey passengers in the *Comet* from Greenock to Helensburgh.

"Passengers by the *Comet* will receive information of the hour of sailing by applying at Mr. Houslem's office, Broomielaw, or Mr. Thomas Blackney's, East Quay Head, Greenock.

"(Signed), HENRY BELL.

"Helensburgh Baths, Aug. 5, 1812."

Bell's claims to recognition are very much the same as those of Fulton and Livingston in the United States. He was instrumental in bringing steam navigation to a practical issue, but was not its inventor or first introducer. In 1816, he addressed an interesting letter to the *Caledonian Mercury*, showing the intimacy which existed between himself and Fulton, and proving that the leaders of the new steam movement were in frequent communication.



BELL'S "COMET."

In this letter he commences by recapitulating Miller's experiments in propelling vessels or rafts by paddles worked by capstans or by wind, like a windmill. These ideas were communicated to all the Courts of Europe, and the French, at one time, actually proposed something of the nature of rafts worked by Miller's plan, for the conveyance of troops to England. Miller sent one of his capstan vessels as a present to the King of Sweden. Bell makes the following statement:—

"Fulton came to the knowledge of steam-boats by employing me (H. Bell) about some plans of machinery, and begged me to call on Miller and see how he had succeeded in his steam-boat plan; and if it answered, to send him full drawings and description along with my machinery. I had a conversation with Miller, who gave me every information. I (H. Bell) told him that his engineer was wrong, and that I intended giving Fulton my opinion on steam boats. I left Fulton's letter with Miller.

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FOUR GREAT ENGINEERS.

"Two years after, a letter from Fulton arrived, stating that he had constructed a steam-boat from the drawings I had sent him, but improvements were required. This letter I also sent to Miller."

He goes on to say that he set on foot his steam-boat after making various models, and when convinced they would answer, contracted with John Wood and Co., ship-builders, Port Glasgow, to build the *Comet*, so called from a comet which appeared in Scotland at that period. He claims that the *Comet* was the first steam-vessel built in Europe "that would work," but this is unfair to the memories of Miller and Symington.

Oddly enough, while Bell was experimenting on the Clyde, Mr. Dawson was doing the same in Ireland. He even claims that he built a fifty-ton steamer in 1811, and which, by a coincidence simply, as it would seem, he had also named the *Comet*. He put the first steamer for public accommodation on the Thames in 1818, to run between London and Gravesend. Mr. Lawrence, of Bristol, introduced a steam-boat on the Severn shortly after Bell put the *Comet* on the Clyde, and brought her to London, but so great was the opposition from the watermen that he took her back to Bristol. She was afterwards taken to Spain, and long plied between Seville and St. Lucar. These were the precursors of those grand steam-ship lines which now run to every part of the habitable world. Bell's steamer was made, in the second year of its career, a pleasure-boat to many parts of the coasts of England, Scotland, and Ireland, and may therefore count as one of the first ocean-going as well as river steamers.

CHAPTER VI.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

The Clyde and its Ship-building Interests—From Henry Bell to Modern Ship-builders—The First Royal Naval Steamer—The First Regular Sea-going Steamer—The Revolution in Ship-building—The Iron Age—"Will Iron Float?"—The Invention of the Screw-propeller—Ericsson, Smith, and Woodcroft—American 'Cuteness—Captain Stockton and his Boat—The First Steamer to Cross the Atlantic—Voyages of the *Sirius* and *Great Western*—The International Struggle—The Collins and Cunard Lines—Fate of the *Arctic*—The *Pacific* never heard of more—Why the Cunard Company has been Successful—Splendid Discipline on Board their Vessels—The Fleets that Leave the Mersey.

WHAT a contrast to the days of Henry Bell does the Clyde now present! From a mere salmon stream it has become, in little more than half a century, by far the largest and most important ship-building river in the wide world. "Ancient historians have told us that when the first Punic war roused the citizens of Rome to extraordinary exertions in the equipment of a fleet for the destruction of the maritime supremacy of Carthage, the banks of the Tiber resounded with the axe and the hammer, and that the extent of the ship-building operations then carried on was a matter not merely of surprise, but of wonder. How insignificant, however, was that sound when compared with that of the steam-hammer and the anvil, and the din of the work now to be heard on the banks of the Clyde. For miles on both sides of the river stupendous ship-building yards line its banks, employing tens of thousands of hardy and skilled mechanics earning their daily

bread, as God has destined all men to do, by 'the sweat of their brow.' . . . Along those banks there is now annually constructed a much larger amount of steam tonnage than in all the other ports of Europe combined, those of England alone excepted." These great private yards have been and will be invaluable in war times. Take such a firm as that of John Elder and Co., Fairfield, Glasgow, whose works cover sixty acres of ground. They have built vessels in the course of a year aggregating 35,000 to 40,000 tons, and have contracted for as many as six 4,000-ton steam-ships at a time. One of these was delivered to her owners complete and ready for sea, with steam up, within thirteen months of the time she was contracted for. Bell's *Comet* was only of thirty tons, and its engine but of four-horse power! Mr. James Deas, C.E., in a work on the Clyde and its commerce, &c., says:—"It was no uncommon occurrence for the passengers, when the little steamer was getting exhausted, to take to turning the fly-wheel to assist her."* Poor Bell, like so many of the pioneers of grand and important undertakings, did not profit much by his successful application of steam to navigation, and in his declining years was chiefly supported by an annuity of £50 granted by the Clyde trustees.

While the public, after the successful experiments already mentioned, and others which followed, were beginning to appreciate the value of steamers, the Admiralty would have nothing to do with them, and it took them about forty years before they reluctantly applied steam to war vessels. The absolutely first steam vessel built for the Royal Navy was a tug, also named the *Comet*. She was constructed in 1819, after some experiments had convinced Lord Melville and Sir George Cockburn of the value of steam power in towing men-of-war. "At this period, Mr. Rennie, who planned the breakwater at Plymouth and new London Bridge, was 'advising engineer' to the Admiralty, and on every occasion urged the application of steam power to vessels of war. More than this, he hired at his own cost the Margate steam-boat, the *Eclipse*, and successfully towed the *Eastings*, 74, against the tide from Woolwich to Gravesend, June 14th, 1819. On this, the Admiralty, supported by Lord Melville, gave up their objections."†

Still, practically, it was not till after the Crimean war that steam became the leading motive power in our war navy. The merchants were more sensible. Mr. David Napier had, in 1818, launched a steamer of ninety tons burden—the *Rob Roy*—from the yard of Mr. William Denny, of Dumbarton. For two years she ran between Glasgow and Belfast, carrying the mails, and was the first *regular sea-going steamer* which had been built in either Europe or the United States. But she also calls for particular mention for another reason: she was subsequently transferred to the English Channel as a packet-boat between Dover and Calais. And there are still, no doubt, many travellers or residents of those towns who can remember the inauguration of what is now a most important service. The same Napier, whose name is very intimately connected with the history of the marine engine, which he was constantly striving to improve, inaugurated, with the assistance of capitalists, a line between Liverpool, Greenock, and Glasgow. Next followed a line from London to Leith, which commenced with two steamers, each fitted with engines of fifty horse-power. Now came an immense advance, for in 1826, the first of the then considered "leviathan" class of steamers—the *United Kingdom*—

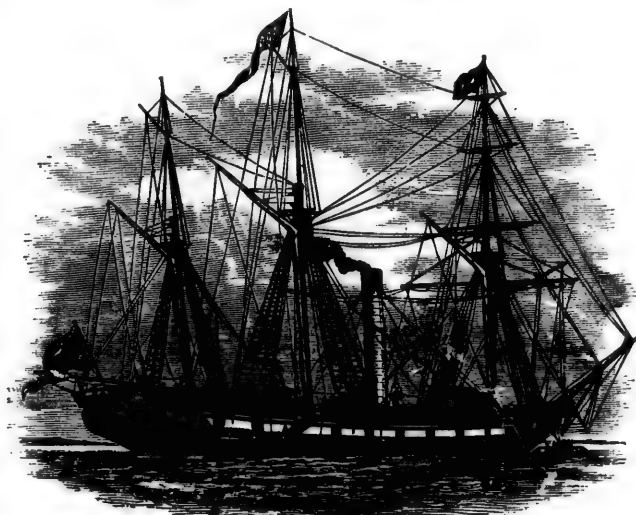
* The engine of this vessel is to be seen in the Patent Office Museum.

† Smiles' "Lives of the Engineers."

was built for the trade between London and Edinburgh. She was 160 feet long, with engines of 200 horse-power. "People flocked from all quarters to inspect and admire her."

Although these two lines of regular steam communication between Liverpool and the river Clyde, and between London and Edinburgh, were now successfully established and proved of considerable importance in the encouragement of steam navigation elsewhere, some years elapsed before those rapid strides were made in its adaptation as a propelling power which have rendered it one of the wonders of the present age. Indeed, this power would probably never have made such an extraordinary advance had iron not been adopted instead of wood for the construction of our ships.

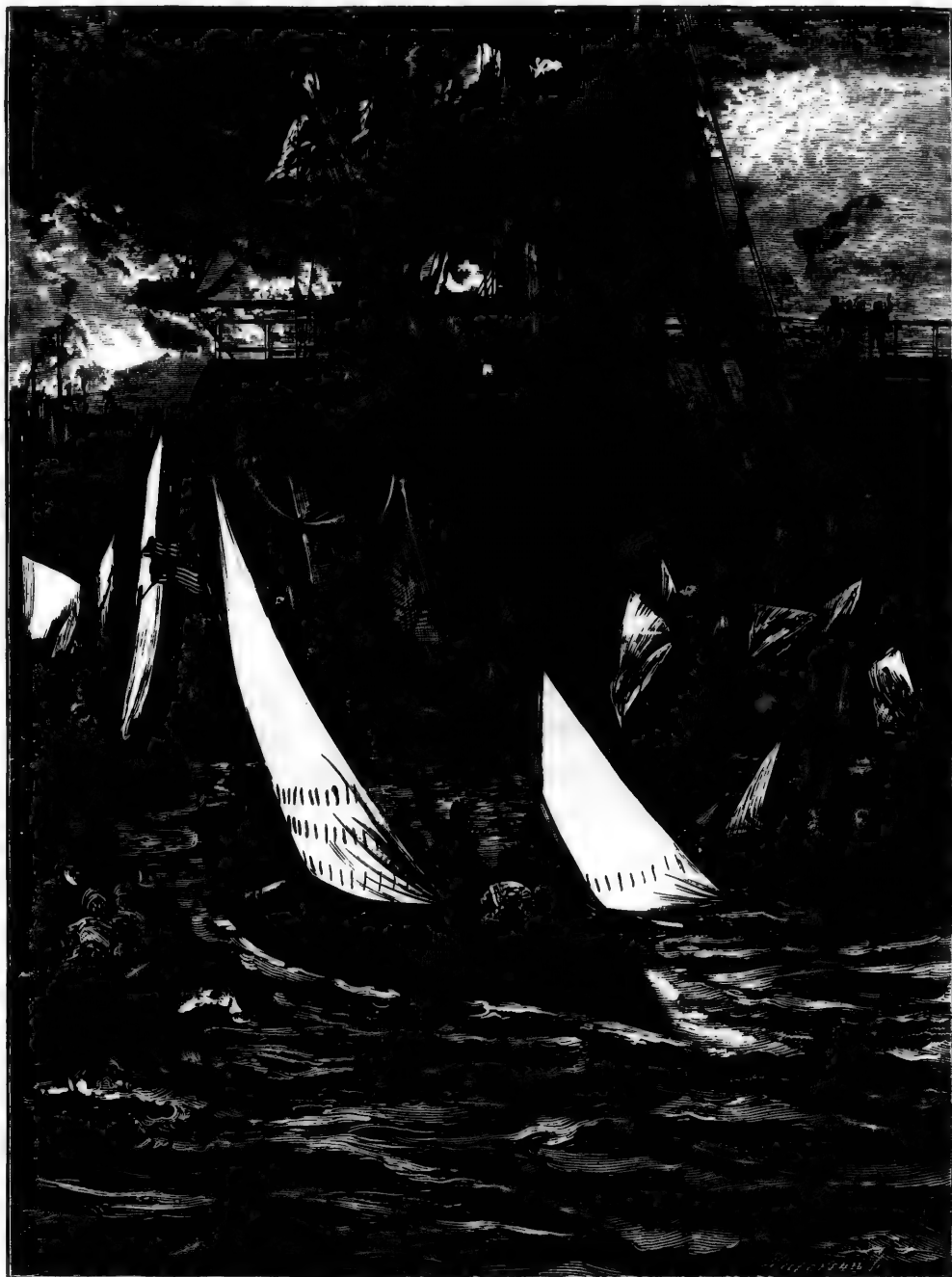
Hitherto throughout all ages, timber alone had been used in ship-building. The forests



THE "UNITED KINGDOM."
(From a Drawing by E. W. Cooke, R.A.)

of Lebanon had supplied the naval architects of Tyre with their materials; Italy cultivated her woods with unusual care so that sufficient trees might be grown for the timber-planking and masts of ships for its once powerful maritime republics; and in our own time how often have we heard fears expressed that Great Britain would not be able to continue the supply of sufficient oak for her royal dockyards, much less for her merchant fleets? Yet, when shrewd, far-seeing men, no farther back than the year 1830, talked about substituting iron for the "ribs" of a ship instead of "timber," and iron plates for "planking" instead of oak, what a howl of derision the public raised.

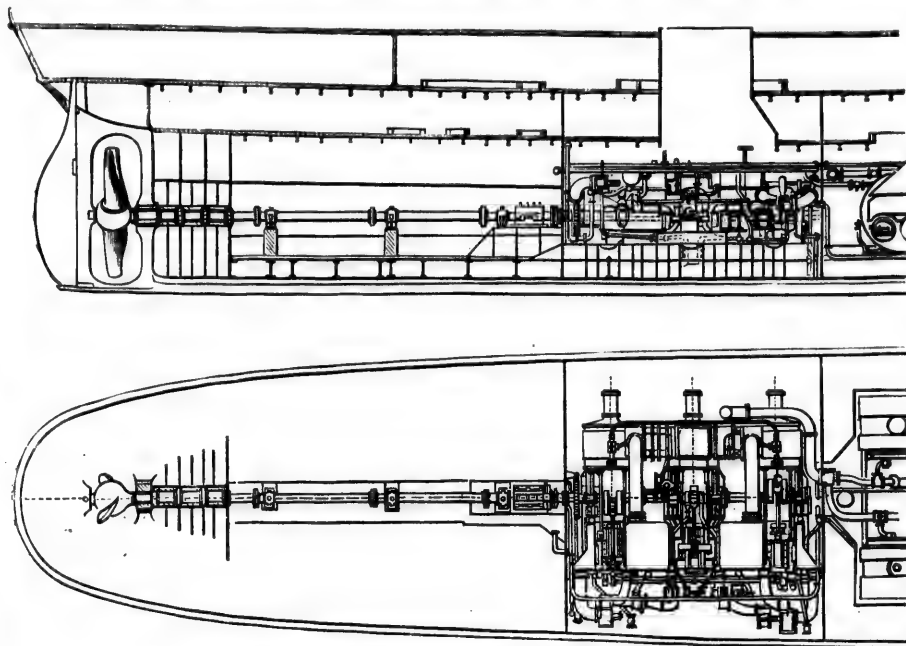
"Who ever heard of iron floating?" they derisively inquired," says Lindsay. "It is true they might have seen old tin kettles float on every pool of water before their doors almost any day of their lives—nay, floating even more buoyantly than their discarded wooden coal-boxes, but such common-place instructors were beneath their notice. Timber-built ships had from time immemorial been in use in every nation and on every sea, and



ARRIVAL OF THE "GREAT WESTERN" AT NEW YORK.

had bravely battled with the storm from the days of Noah, and were these, they sneeringly asked, to be supplanted by a material which in itself would naturally sink? Such was the reasoning of the period; and, indeed, the best of the arguments against the use of iron rested on scarcely more solid foundation." *

It is true that so early as 1809, Richard Trevethick and Robert Dickenson had proposed to build "large ships with decks, beams, and sides of plate iron," and had even suggested "masts, yards, and spars" of iron, which latter are now by no means uncommon. "But," says Lindsay, "as these inventors or patentees did not put their ideas into practice, no



SECTION AND PLAN OF THE STERN OF A SCREW STEAMER.

other person (if, indeed, any other person gave even a passing thought to the subject) was convinced that any craft beyond a boat or a river-barge could be constructed of iron, much less that if made in the form of a ship, this material would oppose more effectual resistance to the storms of the ocean, or, if dashed upon the strand, to the angry fury of the waves, than timber, however scientifically put together. But though no available substance can withstand the raging elements with less chance of destruction than plates of iron

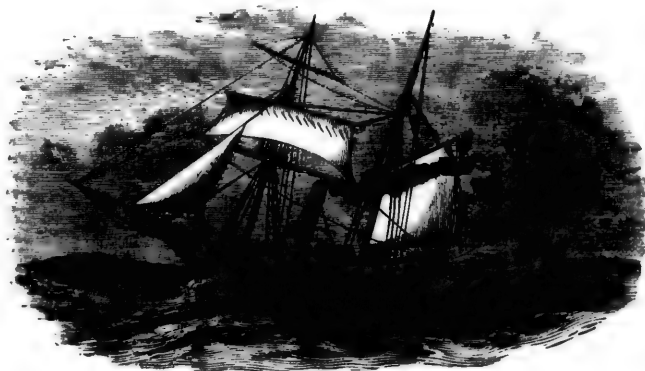
* In an able pamphlet, "The Fleet of the Future," by Mr. Scott Russell, published by Longmans & Co. in 1861, the author remarks (p. 20):—"A good many years ago, I happened to converse with the chief naval architect of one of our dockyards on the subject of building ships of iron. The answer was characteristic, and the feeling it expressed so strong and natural that I have never forgotten it. 'Don't talk to me about iron ships, it's contrary to nature.' There was at one time almost as great a prejudice against Indian teak as a material for shipbuilding, as this wood is heavier than water, and, in the form of a log, will not float."

riveted together in the form of a boiler (the principle on which iron ships are now constructed), the public could not then appreciate their superior value; and it was not until 1818 that the first *iron vessel* was built." This vessel is in use even now. Three years afterwards a steam-engine was, for the first time, fitted into a vessel built of iron—the *Aaron Manby*—constructed for Mr. Manby and Captain Napier, afterwards Admiral Sir Charles Napier. Gradually the suitability of these vessels was becoming apparent, and from this time dates the establishment of some of the greatest ship-building yards, like those of the Lairds and Fairbairns. In 1834 the first-named firm built the *Garry Owen* for service between Limerick and Kilrush. Almost fortunately, she was driven on shore with a number of wooden vessels, all of which were wrecked or seriously damaged, while she got off with scarcely any damage, and the credit of iron vessels became improved. But another of the chief and more tenable objections to the extended use of iron vessels was the perturbation of the compass. This has been clearly shown to proceed almost entirely from the proximity of iron *not* forming a part of the *hull* of the ship, the magnetic influence of which is comparatively even all round. A funnel, tank, boilers, the machinery, the iron fastenings even of a deck-house, &c., may all have their influences. Still these influences are now regulated and understood, and iron ships are more commonly employed than those of wood, showing that it is not an objection which can be urged to-day. After the early steamers came by degrees iron sailing vessels, till at length we find iron applied to a grand steamer, magnificent then and first-class still, the *Great Britain*. "Experience by degrees successfully met almost every objection; and science was again triumphant over prejudice and ignorance. Iron had been made not merely to float, but to ride buoyantly over the crest of the wave amid the raging elements."

Then came the introduction of the screw-propeller, which, if we are to believe some authorities, is an early invention of the Chinese. There have been many claims to its invention in modern times. In May, 1804, Mr. J. Stevens, of the United States, put to sea with a steam-boat propelled with some form of screw. Trevethick, the engineer, in 1815, patented "a worm or screw revolving in a cylinder at the head, sides, or stern of a vessel;" and the following year, Robert Kinder applied for a patent for a shaft and screw almost of exactly the form now in use. The French claim it, and only a few years since erected at Boulogne a monument to Frédéric Sauvage, as its inventor. On the front is a bronze bas-relief showing a vessel with a screw-propeller. Sauvage's life was similar to those of many other inventors, in that he spent his days and fortune in perfecting inventions which brought him no profit. Having lost his own money, and got into great difficulties, he was thrown into a debtors' prison, and subsequently ended his days in a madhouse. Lindsay remarks properly that "the number of claimants to every important invention is remarkable. An impartial student will, however, probably come to the conclusion that the invention of the screw and its application was, like that of the steam-engine itself, the sole property of no one man." The time for its development and proper use had come, and many scientific students were inquiring concerning its value.

There can be little doubt that the first demonstration in our country of its value on a proper scale and in convincing form, was that made by Captain John Ericsson, a Swedish engineer resident in London. After a successful experiment with a model, he had a boat

built forty-five feet in length, and fitted with engine and two propellers. She was named the *Francis B. Ogden*. "The result of her first trial went far beyond his most sanguine expectations. No sooner were the engines put at full speed, than she shot ahead at the rate of more than ten miles an hour." Afterwards she towed a schooner of 140 tons burden at seven miles an hour. The next experiment was made in the presence of the Lords of the Admiralty, and they were minute in their inspection. Ericsson felt confident that they were convinced, and would soon order the construction of a war-vessel on the new principle. In this, however, he was disappointed, though he had given them a tolerably good proof of its value by towing their barge at the rate of ten miles an hour for a considerable distance. Scientific theorists reported against it, and said that a ship thus propelled would be unsteerable. Lindsay records how Admiral Beechey, one of the old school, in 1850, stated that "he did not believe that the navy of the future—the Royal Navy—ever could consist of steamers! Nor could he endure iron ships."



THE "ROBERT F. STOCKTON."

While Ericsson was thus employed, Mr. Thomas Pettit Smith, who, on the 31st May, 1836, had taken out a patent for a "sort of screw or 'worm,' made to revolve rapidly under water in a recess or open space formed in that part of the after-part of the vessel commonly called the dead rising or dead wood of the stern," was experimenting, and the following year exhibited it in practical form in a small vessel. It appeared to several gentlemen so satisfactory that a company was formed in July, 1839, to purchase the patent. It was now applied to a vessel called the *Archimedes*, the burden of which was 237 tons, and although her speed was somewhat less than Ericsson's vessel, the trial was undeniably satisfactory, more especially as it was obvious that her engine was really not large enough for a propeller of the size. In her next trials against the *Widgeon*, the fastest paddle-wheel steamer then running between Dover and Calais, the success of the screw might be regarded as an established fact. The *Archimedes* laboured under the disadvantage of having ten horse-power less steam, while her burden was seventy-five tons more; she had the advantage of carrying more sail. On the first three trials the *Widgeon* had a very slight advantage, in spite of her superior steam-power and smaller tonnage, while on the last two the

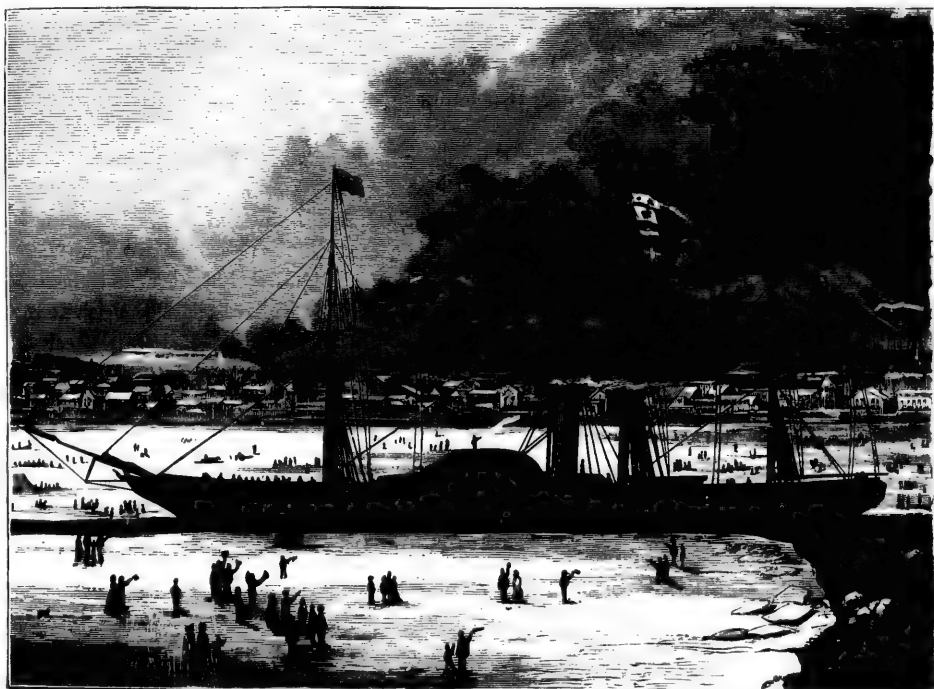
Archimedes made the trip in less time than it had ever previously been performed by any of the mail packets. Captain Chappell, R.N., afterwards took her clear round England and Scotland, calling at numerous ports. The Admiralty at length ordered the construction of a screw vessel, and the lines of the *Rattler* were laid down on the same model as the *Alecto*, a paddle-wheel steamer then building.

Another claimant as an inventor, who should be mentioned most honourably, is Mr. Woodcroft, some of whose experiments were being patented in 1826. They were not tried on a suitable scale till after the successes of Ericsson and Smith. Woodcroft's "varying pitch screw-propeller," patented in 1844, the title of which describes itself, is to-day "considered the best and most useful type."

In following the progress of the screw, as applicable to the propulsion of merchant vessels,* and its use in other countries, we must now recur to the period when Ericsson was making his experiments on the Thames. At that time an intelligent gentleman, Captain Robert F. Stockton, of the United States' Navy, was on a visit to London; being of an inquisitive turn of mind, like most of his countrymen, he watched with great interest the trials with the screw then in progress, and having obtained an introduction to Ericsson, he accompanied him on one of his experimental expeditions on the Thames. Unlike the Lords of the British Admiralty, who allowed eight years to elapse before they built their first screw-propeller, the *Rattler*, Captain Stockton was so impressed with the value and utility of the discovery, that, although he had only made a single trip in the *Francis B. Ogden*, and that merely from London Bridge to Greenwich, he there and then gave Ericsson a commission to build for him two boats for the United States, with steam machinery and propeller as proposed by him. Stockton, impressed with its practical utility for war purposes, was undismayed by the recorded opinions of scientific men, and formed his own judgment from what he himself witnessed. He, therefore, not only ordered the two iron boats on his own account, but at once brought the subject before the Government of the United States, and caused various plans and models to be made at his own expense, explaining the fitness of the new invention for ships of war. So sanguine was he, indeed, of the great importance of this new mode of propulsion, and so determined that his views should be carried out, that he encouraged Ericsson to believe that the Government of the United States would test his propeller on a large scale; Ericsson, relying upon these promises, abandoned his professional engagements in England, and took his departure for the United States. But it was not until a change in the Federal administration, two years afterwards, that Captain Stockton was able to obtain a favourable hearing. Orders were then given to make an experiment in the *Princeton*, which was successful. The propeller, as applied to this war vessel, was similar in construction to that of the *Francis B. Ogden*, as well in theory as in minute practical details. One of the boats, named after her owner, the *Robert F. Stockton*, was built by Messrs. Laird, of Birkenhead, and launched in 1838. She was 70 feet in length, 10 feet wide, and drew 6 feet 9 inches of water. Her cylinders were 16 inches diameter with 18 inches stroke, and her propellers 6 feet 4 inches

* The above account is derived from Lindsay.

in length. On her trial trip on the Thames, made in January of the following year, she accomplished a distance of nine miles in about half an hour with the tide, proving the speed through the water to be between eleven and twelve miles an hour. On her second trial, between Southwark and Waterloo Bridges, she took in tow four laden barges with upright sides and square ends, having a beam of fifteen feet each, and drawing four feet six inches of water. One of these was lashed on each side, the other two being towed astern, and though the weight of the whole must have been close upon 400 tons, and a considerable resistance



THE FIRST CUNARD STEAMER.

was offered by their forms, the steamer towed them at the rate of $5\frac{1}{2}$ miles an hour in slack water, or in eleven minutes between the two bridges, a distance of one mile.

These experiments having been considered in every way satisfactory, the *Robert F. Stockton* left England for the United States in the beginning of April, 1839, under the command of Captain Cram of the American merchant service. Her crew consisted of four men and a boy; and having accomplished the voyage *under sail* in forty days, Captain Cram was presented with the freedom of the city of New York for his daring in crossing the Atlantic in so small a craft, constructed only for river navigation.

The first steamer to cross the Atlantic was the *Savannah*, of 300 tons, which arrived in Liverpool from Savannah, Georgia, in thirty-one days, her voyage having been made partly under sail. So to America belongs the credit of having shown the practicability

of employing steam power for the most difficult and dangerous voyages. The *Savannah's* horse-power was too small for her size, and although she arrived safely, the experiment was not regarded by men of science as particularly successful. Dr. Lardner in particular, and other scientists, expressed their belief that no vessel could carry coal enough to steam the whole distance, and their discussions greatly retarded the progress of Transatlantic steam navigation. The voyage of the *Savannah* was made in 1819; ten years elapsed before the Atlantic traffic was renewed, so far as steam was concerned, by the dispatch of an English-built steam-ship, the *Curaçoa*, which made several trips from Holland to the West Indies. In 1833 a steam-ship, named the *Royal William*, sailed from Quebec, and arrived safely at Gravesend. But it was not till 1838 that the practicability of profitably employing steam-ships on the Atlantic was demonstrated by the voyages of the *Sirius* and *Great Western*, the latter one of the finest vessels of the day. Their arrival at New York is thus described by one of the journals of that city:—

"At three o'clock p.m., on Sunday the 22nd of April, the *Sirius* first descried the land, and early on Monday morning, the 23rd, anchored in the North River immediately off the battery. The moment the intelligence was made known, hundreds and thousands rushed, early in the morning, to the battery. Nothing could exceed the excitement. The river was covered during the whole day with row-boats, skiffs, and yawls, carrying the wondering people out to get a close view of this extraordinary vessel. While people were yet wondering how the *Sirius* made out to cross the rude Atlantic, it was announced, about eleven a.m. on Monday, from the telegraph, that a huge steam-ship was in the offing. 'The *Great Western*! The *Great Western*!' was on everybody's tongue. About two o'clock p.m., the first curl of her ascending smoke fell on the eyes of the thousands of anxious spectators. A shout of enthusiasm rose in the air." The movements of a great steam-ship in and out of port are always watched with interest—why, even the arrival of the "husbands' boat" at Margate or Ramsgate is an event! One can, then, well imagine and understand the excitement caused in New York by the arrival of two fine vessels almost simultaneously from England. It meant, in some branches of commerce, a complete revolution. These first passages were made in seventeen and fifteen days respectively. Almost immediately after this, the great Cunard Company commenced operations, the Admiralty awarding them the mail contract. Then came the great contest for the maritime supremacy, commercially regarded, of the Atlantic Ocean, when American enterprise came into the field, and organised a formidable rival to the English company in the Collins Line. The history of this contest would fill a volume.

The national pride of the Americans had been touched by the commercial success of British steam-ships frequenting their ports, and they determined, vulgarly speaking, "to have a piece of the pie." American genius and enterprise had sent forth a fleet of steamers to trade on their coasts, lakes, and rivers, which a leading English authority considers "were marvels of naval architecture, unsurpassed in speed, and in the splendour of their equipment." Their clipper-sailing ships "were the finest the world had then produced, while their perfection in the art of ship-building had even reached so high a point that they constructed steamers to ascend rivers where

there was hardly depth of water for an Indian canoe; indeed, it was proverbially said, in honour of their skill in the art, that their vessels would traverse valleys if only moistened by the morning dews." Why should they not have a great ocean line? It was looked upon in Congress and by the country generally as almost a national question, and it resulted in a heavy mail subsidy to Mr. Collins and his colleagues. They immediately made arrangements for the construction of four large vessels. Later, the Government increased the subsidy by over one-third (from \$19,250 per trip to \$33,000) but increased speed was required in return. How much this may have had to do with the two terrible disasters about to be related will no doubt strike the reader. The Collins Line commenced its voyages in 1850.

"A voyage across the Atlantic," says Lindsay, "must ever be attended with greater peril than almost any other ocean service of similar length and duration; arising, as this does, from the boisterous character and uncertainty of the weather, from the icebergs which float in huge masses during spring along the northern line of passage, and from the many vessels of every kind to be met with either employed in the Newfoundland fisheries, or in the vast and daily-increasing intercourse between Europe and America.

"In such a navigation the utmost care requires to be constantly exercised, especially by steam-ships. Nevertheless, although the Collins Line of steamers performed this passage with a speed hitherto unequalled, they encountered no accidents worthy of notice during the first four years of their career; but terrible calamities befell them soon afterwards."

On the 21st of September, 1854, the *Arctic*, according to the usual course, left Liverpool for New York. She had on board 233 passengers, of whom 150 were first-class, together with a crew of 135 persons and a valuable cargo. At mid-day on the 27th of that month, when about sixty miles south-east of Cape Race, and during a dense fog, she came in contact with the French steamer *Vesta*. By this collision the *Vesta* seemed at first to be so seriously injured, that in their terror and confusion, her passengers, amounting to 147, and a crew of fifty men, conceived she was about to sink, and that their only chance of safety lay in their getting quickly into the *Arctic*. Impressed with this idea many of them rushed into the boats, of which, as too frequently happens, one sank immediately, and the other, containing thirteen persons, was swamped under the quarter of the ship, all on board of her perishing. When, however, the captain of the *Vesta* more carefully examined his injuries, he found that though the bows of his vessel were partially stove in, the foremost bulk-head had not started. He therefore at once lightened his ship by the head, strengthening the partition by every means in his power, and by great exertions, courage, forethought, and seamanship, brought his shattered vessel, without further loss, into the harbour of St. John's.

In the meantime a frightful catastrophe befell the *Arctic*, and was so little anticipated that the persons on board of her supposing that she had only sustained a slight injury by the collision, had launched a boat for the rescue of the passengers and crew of the *Vesta*. It was soon, however, discovered that their own ship had sustained fatal injuries, and the sea was rushing in so fast through three holes which had been pierced in the hull

below the water-line, that the engine fires would soon be extinguished. The *Arctic's* head was therefore immediately laid for Cape Race, the nearest point of land; but within four hours of the collision the water reached the furnaces, and soon afterwards she foundered. As it was blowing a strong gale at the time, some of the boats into which the passengers and crew rushed were destroyed in launching; others which got clear of the sinking ship were never again heard of, and only two, with thirty-one of the crew and fourteen passengers, reached Newfoundland. Among those who perished were the wife of Mr. Collins, and their son and daughter; but the captain, who remained on board to the last, and the first as well as the second and fourth officers, were saved. Seventy-two men and four females sought refuge on a raft, which the seamen, when they found the ship sinking, had hastily constructed; but one by one they were swept away—every wave as it washed over the raft claiming one or more victims as its prey; and at eight o'clock on the following morning *one* human being alone was left out of the seventy-six persons, who only twelve or fifteen hours before had hoped to save their lives on this temporary structure. The solitary occupant of this fragile raft must have had a brave heart and a strong nerve to have retained his place on it for a day and a half after all his companions had perished, for it was not until that time had elapsed that he was saved by a passing vessel. His tale of how he and they parted was of the most heart-rending description.*

As a large portion of the first-class passengers of the *Arctic* consisted of persons of wealth and extensive commercial relations in the United States, as well as in England and the colonies, and besides more than one member of her aristocracy, the loss of the *Arctic*, and the terrible incidents in connection with her fate, caused an unusual amount of grief and consternation on both sides of the Atlantic.

Within little more than twelve months from this time another great calamity befell the Collins Company, and the sad loss of their steamer *Pacific*—from the mystery in which it was shrouded, if not as lamentable as that of the *Arctic* (for the soul of man has never been harrowed with its details)—was equally deplorable. Although the ocean in this instance has left no record of its ravages, the stern fact announced in the brief words, "*she was never heard of*," tells itself the sad, sad tale that a great ship, with all her living inmates, in infancy, in manhood and old age, and it may be full of hope and joy, had been engulfed in the blue waters of the Atlantic—summoned, perhaps in a moment, to an eternity more mysterious than that which surrounded their melancholy fate.

The splendid but unfortunate ship left Liverpool on the 23rd of January, 1856, having on board twenty-five first-class passengers, twenty second-class passengers, and a crew of 141 persons, almost all of whom were Americans. She carried the mails and a valuable cargo, the insurances effected on her being 2,000,000 dollars. But no living soul ever returned to tell where or how she was lost, nor were any articles belonging to her ever found to afford a clue to her melancholy fate; it can only be supposed that she sprang an overflowing leak, or more probably struck suddenly when at full speed on an iceberg, and instantly foundered.

The Collins Line ceased to exist a few years after these serious disasters, but the

* See *Annual Register*, 1854, p. 162.

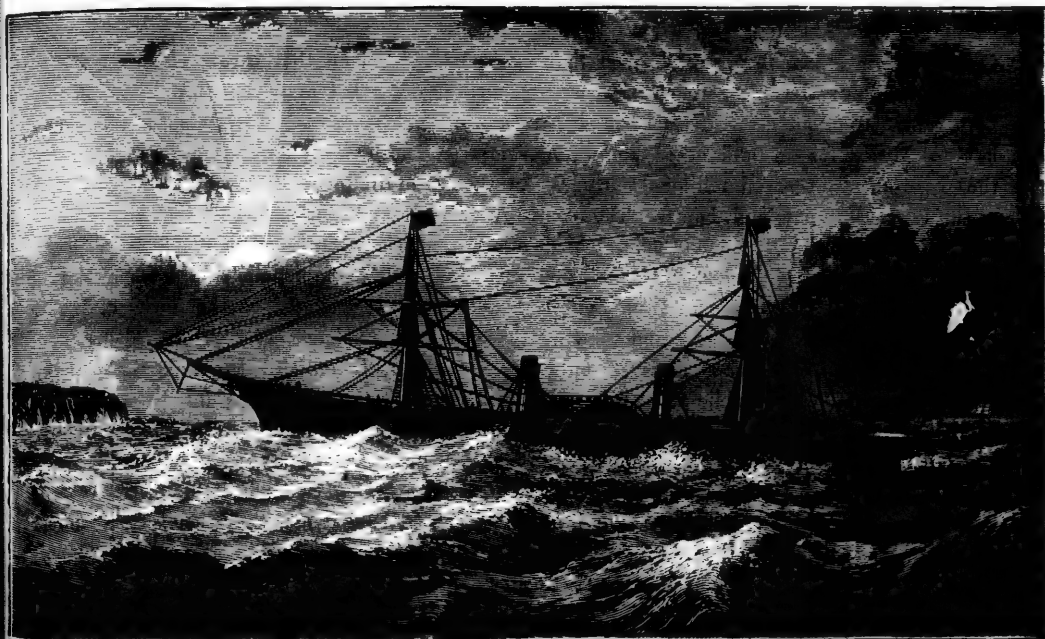
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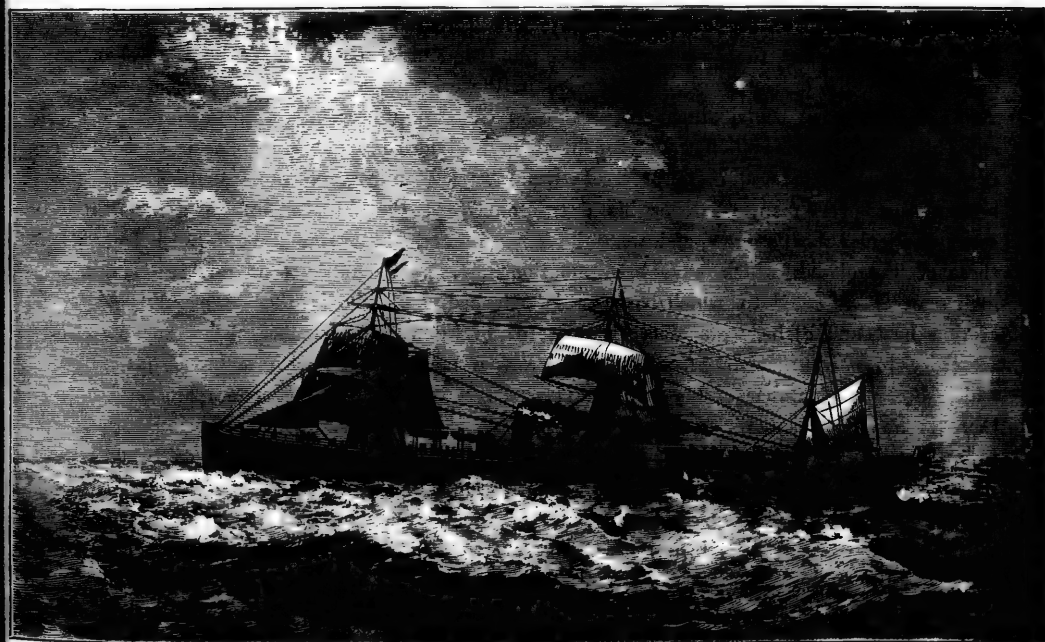
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CUNARD PADDLE STEAM-SHIP "SCOTIA."



THE CUNARD SCREW STEAM-SHIP "BOTHNIA."

Cunard became more firmly established than ever, and entered on that career of prosperity which has been the most remarkable of any in the long list of steam-ship lines. Its fleet consisted of forty-nine vessels in 1875, running not merely on the Atlantic service, but to Mediterranean and other ports. A competent authority puts the money value of the ships at about seven millions sterling. In the ocean line the crews are engaged for a single voyage out and home. The company shipped and discharged during the year ending July 1st, 1872, 43,000 men, which means that they continuously employed about 8,600 persons on their ships. About 1,500 men find regular employment in loading and unloading the steam-ships, and from 500 to 1,500 more are engaged at the docks of the company in Liverpool in fitting and refitting these vessels. "Hence the company, although a private enterprise in the hands of only three families, is entitled to rank with the great railway and other public companies as an employer of labour."* The Cunard Company, in 1861, enrolled a regiment of Volunteer Artillery (the 11th Lancashire) 500 strong, composed entirely of their own *employés*, and they have always shown much public spirit in Liverpool in the promotion of schools, asylums, and other provident and charitable institutions for the seamen's benefit. During the Crimean war, and in 1861, when the friendly relations between Great Britain and America were put in jeopardy by the forcible arrest of Messrs. Mason and Slidell, when on board the Royal Mail steamer *Trent*, the resources of the company were put into requisition for the conveyance of troops and stores. Their two largest ships, the *Bothnia* and *Scythia*, each of 4,535 tons burden, have saloons where 300 persons can dine at one time, while their decks afford an unbroken promenade, for passengers, of 425 feet.

The wonderful exemption from shipwreck and casualties, which is the just pride of this company, is due to the admirable discipline and order enforced. Take the following description of life on the *Bothnia* as detailed in the columns of our leading journal:—"The *Bothnia* carries ten boats, which are capable of containing her full complement of people; and she has a crew of 150 officers and men, all told, divided into the three classes of seamen, engineers and firemen, and stewards. It has always been part of the Cunard Company's system that every man, whatever his duties on board the ship, should be a member of some particular boat's crew, and that the crew of each boat should be formed from all three of the classes which have been mentioned. . . . As soon as all are on board, each man is informed to which boat he is attached, and who is the commanding officer of that boat, and each boat's officer is expected to know every member of his boat's crew. In order to prevent mistakes, each man wears a metal badge, with a brooch-fastening, which bears the number of his boat," and so forth. Before the passengers are on board, there is an inspection, the crew being drawn up in two lines, each man being expected to answer to his name. The muster-roll having been called, orders are given to prepare for boat service; and the men break up into the necessary number of crews. After the order 'Boats out!' is given, the men fall to work with a will, and the ten boats, each containing a keg of water, oars, spars, sails, an axe, &c., are in three minutes properly launched into the water, the captain from his place of vantage on the bridge looking

* The *Times*, November 17th, 1875.

sharply after laziness or awkwardness. The same organisation of crews is applied to fire duty. Some have charge of the buckets; others fetch and join the hose, or take care of the jets; others are ready with wet blankets to throw over the flames; but the essential matter is that each man has his place and his duty. So for manning the pumps and other essential matters. These drills over, the inspecting party proceeds to make a complete tour of the vessel. The store-rooms are visited, and the steward cautioned never to use any other light than a closed and locked lamp. The supply of rockets and other signals is examined, the steering and signalling apparatus tried, and only after everything has been found in order is the word given for the ship to embark her passengers and proceed on her course. "If the smallest defect," says the *Times*, before quoted, "is discovered in any part of a ship, no question is raised whether it will bear one voyage or two voyages more, but the order, 'Out with it!' is given at once." The reign of order is as complete as on board a well-regulated man-of-war. On the many other great steam-ship lines more or less of the same inspection occurs, and on some, no doubt, the precautions taken are nearly as careful. The Cunard Line is generally admitted to be, however, pre-eminent in the care taken of life and property on board, the fact being that the company has never lost a ship on the Atlantic. The illustration on page 109 shows one of their finest ships, the *Scotia*.

From the Mersey alone there are ten distinct fleets sailing to America, including such magnificent steam-ships as those of the White Star and Inman Lines. In the former the luxurious saloons are placed amidships, the motion being less felt there. The Inman Line has made the quickest passages across the Atlantic on record, and has carried as many as 50,000 steerage passengers in one year. In 1856 and 1857 this line carried 85,000 passengers, of both classes, to and from the United States, or about one-third of all those crossing "the Great Ferry" for those years. The shortness of time to which the Inman steamers have reduced the passage across the Atlantic was conspicuously shown by the voyage of Prince Arthur in 1869, who attended service at Queenstown on the Sunday morning of his departure, and was landed at Halifax in time to attend morning service at that place on the Sunday following. Their ship, the *City of Berlin*, of 5,500 tons, is the largest vessel afloat except the *Great Eastern*, and has accommodation for 1,700 passengers. The White Star Line has two vessels of 5,004 tons each, the *Britannic* and *Germanic*. These few facts will indicate—although we may not be able to grasp them in their entirety—the immense growth of the ocean steam navigation in a period so short as that which has elapsed from the first steam-voyage across the Atlantic.



MR. PLIMSOLL.

CHAPTER VII.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

A Contrast—Floating Palaces and “Coffin-ships”—Mr. Plimsoll’s Appeal—His Philanthropic Efforts—Use of Old Charts—Badly Constructed Ships—A Doomed Ship—Owner’s Gains by her Loss—A Sensible Deserter—Overloading—The Widows and Fatherless—Other Risks of the Sailor’s Life—Scurvy—Improper Cargoes—“Unclassed Vessels”—“Lloyd’s,” and its History.

TURNING by way of that contrast which our subject so abundantly presents, let us pass from the consideration of well-regulated, well-found steam-ship lines, to a different class of vessels—those “coffin-ships” of which we heard so much a few years since. As we all know, the term has been lately used to signify unseaworthy ships of all kinds—such as that mentioned by Mr. Plimsoll, which was loaded at Newcastle with nearly twice her proper tonnage, and dispatched to the Baltic in mid-winter, *with her main-deck two feet two inches below the level of the water.* She foundered eighteen miles

from the coast. We are told of one man who had in six years lost twelve rotten ships, and 105 men; and of the *Elizabeth*, a vessel so weak and leaky, that it was necessary to pump her every hour when floating empty in harbour, but which was sent to sea with 180 tons of coal to founder with three out of five hands. It was certainly time for legislation when the statement could be made truly that a ship which had been refused a class by Lloyd's Committee, and had been declared utterly unfit to go to sea by Lloyd's surveyor, was dispatched across the Atlantic, or rather to the bottom of the Atlantic, there to lie with one crew, while another was safe in an English prison for refusing to proceed in her.

In 1870, Mr. Samuel Plimsoll first commenced, so far as Parliament is concerned, those benevolent efforts for the amelioration of the sailor's hard life, which must always place him among the highest ranks of philanthropists. Moved evidently by the purest motives, there are one or two mistakes to be recorded against him, but they were of the head, not of the heart. Government was at the time endeavouring, as far as can be seen, to accomplish nearly the same ends, but was hampered by the pressure of Parliamentary business. Lindsay, who was somewhat opposed to the views expressed by Plimsoll, and it is rather unfortunate that he was so, having been so long a ship-owner himself, yet endorses the remarks of a friend—a Vice-Admiral of Her Majesty's service—who wrote to him: "Should there not be some more stringent provisions with respect to the inspection of sailing vessels? It is an old proverb, 'Who ever saw a dead donkey?' But who ever saw an old sailing-ship broken up? I am inclined to think that it is more to the interest of small owners to let an old tub go on shore than to bring her safe into port. This works two evils:—1, the danger to human life; 2, the greater rate of insurance on honest owners to make up an average for the dishonest." The evil had become a most terrible one, and, in spite of some little reform, it is to be feared, goes on to-day with only partially-abated vigour.

"Imperfect charts," says Lindsay, "were often made to cover, as I fear may be the case to some extent now, incompetency, drunkenness, or carelessness. Indeed, about that period, they frequently served as excuses when other objects were in view. I remember a ludicrous example of this. When a boy at school at Ayr, I used to accompany my uncle to 'the meeting of owners' of the brig *Eclipse*, in which he held some eight or ten 64th shares. Every spring the owners met on board to discuss matters relating to her affairs, and to dispose of what I recollect best, a round of salt beef, sea-biscuits, and rum and water. The *Eclipse* had hitherto been invariably employed during the summer season in the conveyance of timber from some one or other of the ports of New Brunswick for Ayr. On one occasion, a tempting freight had been offered for her to proceed to Quebec, and the owners in conclave assembled, had all but unanimously decided to send her to that port. While, however, the discussion was going on, her skipper, Garratt, or, 'old Garratty,' as he was called, seemed very uneasy, and gulping down an extra tumbler of rum and water, he at last said, 'Weel, gentlemen, should you send the *Eclipse* to Quebec, I'll not be answerable for her safety.' 'How so?' asked one of the owners. 'Ah,' said Garratty, drawing his breath, 'the charts are a'wrang in the St. Lawrence. Ye'll ne'er see the *Eclipse* again gin ye send her to Quebec.' The skipper carried the day.

"It is much to be regretted that ship-owners, when they leave their captains to provide their own charts (instead of supplying them) do not stipulate that they are to be the best and the *latest*. I remember a ship and cargo (numerous other instances could be produced), valued at £70,000, lost near Boulogne from the master mistaking the two lights at Etaples for the South Foreland lights; and this, as appeared from the Board of Trade inquiry, because his Channel chart, which was thirty years old, had not the Etaples lights marked on it." The terrible wreck of the *Deutschland* steam-ship, on the 30th December, 1875, was caused, with hardly the shadow of a doubt, from the use of an old chart.

Mr. Plimsoll in a most remarkable and vigorous book,* published in 1873, puts the matter of "coffin-ships" forcibly before his readers. He says, "No means are neglected by Parliament to provide for the safety of life ashore; and yet, as I said before, you may build a ship in any way you please, you may use timber utterly unfit, you may use it in quantity utterly inadequate, but no one has any authority to interfere with you.

"You may even buy an old ship 250 tons burden by auction for £50, sold to be broken up, because extremely old and rotten; she had had a narrow escape on her last voyage, and had suffered so severely that she was quite unfit to go to sea again without more being spent in repairs upon her than she would be worth when done. Instead of breaking up this old ship, bought for 4s. per ton (the cost of a new ship being from £10 to £14 per ton), as was expected, you may give her a coat of paint—she is too rotten for caulking—and to the dismay of her late owners, you may prepare to send her to sea. You may be remonstrated with, in the strongest terms, against doing so, even to being told that if you persist, and the men are lost, you deserve to be tried for manslaughter.

"You may engage men in another port, and they, having signed articles without seeing the ship, you may send them to the port where the ship lies in the custody of a mariner. You may then (after re-christening the ship, which ought not to be allowed), if you have managed to insure her heavily, load her until the main deck is within two feet of the water amidships, and send her to sea. Nobody can prevent you. Nay, more, if the men become riotous, you may arrest them without a magistrate's warrant, and take them to prison, and the magistrates, who have no choice (they have not to make, but only to administer the law), will commit them to prison for twelve weeks with hard labour, or, better still for you, you may send for a policeman on board to overawe the mutineers, and induce them to do their duty! And then, if the ship is lost with all hands, you will gain a large sum of money and you will be asked no questions, as no inquiry will ever be held over those unfortunate men, unless (which has only happened once, I think) some member of the House asks for inquiry.

"The river policeman who in one case threatened a refractory crew with imprisonment, and urged them to do their duty (!) told me afterwards (when they were all drowned) that he and his colleagues at the river-side station had spoken to each other about the ship being dreadfully overloaded as she passed their station on the river, before he went

* "Our Seamen: an Appeal."

on board to urge duty (!) and that he then, when he saw me, 'rued badly that he had not locked 'em up without talk, as then they wouldn't have been drowned.'

Here Mr. Plimsoll indicates another risk for the poor sailor: "There is, I fear, great reason to think that ships are occasionally lost from the very imperfect manner in which some of them are built; in some cases, I think you will see that something worse ought to be said. I do not say the cases are many; still, they exist, and we have done nothing to prevent it. The first time I introduced a bill to prevent overloading, I alluded (mentioning no names) to the case of one ship-owner who, trading to the West Indies for sugar (a good voyage, deep water, and plenty of sea room all the way) had, out of a fleet of twenty-one vessels, lost no less than ten of them in less than three years.

"After I had concluded my speech in moving the second reading, a member accosted me in the lobby and said: 'Mr. Plimsoll, you were mistaken in that statement of yours.' 'What statement?' I answered. 'Oh, that when you said a ship-owner had lost ten ships in less than three years from overloading.' 'I mentioned no names,' I said. 'No, but I know who you meant. He is one of my constituents, and a very respectable man indeed. It is not his fault; it is the fault of the man who built his ships, for one of them was surveyed in London and was found to be put together with devils. He knew nothing about it, I assure you.' 'Devils?' I said. 'Yes.' 'I don't know what you mean.' 'Oh, devils are sham bolts, you know; that is, when they ought to be copper, the head and about an inch of the shaft are copper, and the rest is iron.'

"I have since found there are other and different sham bolts used, where merely a bolthead (without any shaft at all) is driven in, and only as many real bolts used as will keep the timbers in their places. Now these bolts are used to go through the outside planking, the upright timber, not the inner planking (ceiling) of a ship, and through the vertical or drooping part of a piece of iron called a knee, on the upper part of which the deck-beams rest, and to which the deck-beams are also bolted from above. These bolts, therefore, are from thirteen to eighteen inches in length."

The following examples will speak for themselves. Mr. Plimsoll says:—"On the occasion of one of my visits to a port in the north, I was met by a gentleman who knew what my errand there was likely to be, and he said, 'Oh, Mr. Plimsoll, you should have been here yesterday: a vessel went down the river so deeply loaded, that everybody who saw her expects to hear of her being lost. She was loaded under the personal directions of her owner, and the captain himself said to me, "Isn't it shameful to send men with families to sea in a vessel loaded like that?" Poor fellow, it is much if ever he reaches port.' Half a dozen others confirmed this statement. The captain 'was greatly depressed in spirits,' and a friend—not the owner, mark you!—gave him some rockets—in case of the worst.' Two men averred that they would not go if the owner gave them the ship.

"She was sent. The men were some of them threatened, and one at least had a promise of 10s. extra per month if he would go. As she went away, the police-boat left her; the police had been on board to overawe the men with going. As the police-boat left her side, two of the men, deciding that they would rather be taken to prison,

hailed the police, and begged to be taken by them. The police said, 'they could not interfere,' and the ship sailed. My friend was in great anxiety, and told me that if the wind came on to blow, the *ship could not live*.

"It did blow a good half-gale all the day after Sunday—the ship sailed on Friday. I was looking seaward from the promontory on which the ruins of T— Castle stand, with a heavy heart; the wind was not above force 7—nothing to hurt a well found



MR. PLIMSOLL SPEAKING IN THE HOUSE OF COMMONS.

and properly-loaded vessel: I had often been out in much worse weather; but then this vessel was not properly loaded (and her owner stood to gain over £2,000 clear if she went down, by over insurance), and I knew that there were many others almost as unfit as she was to encounter rough weather—ships so rotten that if they struck they would go to pieces at once; ships so overloaded that every sea would make a clean sweep over her, sending tons and tons of water into her hold every time, until the end came.

"On Monday we heard of a ship in distress having been seen, rockets had been sent up by her; it was feared she was lost. On Tuesday the nameboard of a boat was picked up, and this was all that ever we heard of her."

Some cases seemed to be looked on as matters of course, and a gentleman as he saw his wife reading the newspaper, said to her, "Look out, for the — in a day or two;

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I saw her go out of the river. She is sure to be lost." She was lost, and nearly twenty men returned home never more.

Mr. Plimsoll tells another story of two gentlemen, who told him one day that they saw a vessel leaving dock; she was so deep that, having a list upon her, the scuppers on the bow side were half in the water and half out. (A "list" means that she was so loaded as to have one side rather deeper down than the other; the "scuppers" are the holes in the bulwarks that let the water out that comes on deck from the rain, the washing, or the seas breaking over her.) They heard a slight commotion on board, and a voice said to the captain: "Larry's not on board, sir." He had run for it. Nothing could be done, for lack of time, to seek him, so they sailed without him. And these gentlemen heard the crew say, as they slowly moved away from the dockyard: "Then Larry's the only man of us'll be alive in a week." That vessel was lost.

Another large ship was sailing on a long voyage, from a port in Wales, with a cargo of coal. A gentleman called a friend's attention to her state. She was a good ship, but terribly deep in the water. He said, "Now, is it possible that vessel *can* reach her destination unless the sea is as smooth as a mill-pond the whole way?" The sea evidently was not as smooth as a mill-pond, for that ship was never heard of again, and twenty-eight of our poor, hard-working, brave fellow-subjects never more returned to gladden their wives and play with their children.

Mr. Plimsoll saw a large ship put to sea one day. She was so deep that a friend who was standing by said to him as she went: "She is nothing but a coffin for the poor fellows on board of her." He watched and watched, almost fascinated by the deadly peril of the crew, and he did not watch for nothing. Before he left his look-out to go home, he saw her go down.

Even more touching are the records of some visits made by him to the sufferers left behind to mourn the fate of their husbands, drowned in leaky ships which should never have left port.

"In this house, No. 9, L——ll Street, lives Mrs. A——r R——e. Look at her—she is not more than two or three and twenty, and those little ones are hers. She has a mangle, you see. It was subscribed for her by her poor neighbours: the poor are very kind to each other. That poor little fellow has hurt his foot, and looks wonderingly at the face of his young mother. She had a loving husband but very lately, but the owner of the ship on which he served, the S——n, was a very needy man, who insured her for £3,000 more than she had cost him. So if she sank he would gain all this. Well, one voyage she was loaded *under the owner's personal superintendence*; she was loaded so deeply that the dockmaster pointed her out to a friend as she left the dock, and said emphatically, 'That ship will never reach her destination.' She never did, for she was lost with all hands—twenty men and boys. A——R—— complained to him before he sailed that she was 'so deep loaded.' She tried to get to the sands to see the ship off with Mrs. J——r, whose husband was on board. They never saw their husbands again.

"In this most evil-smelling room, E——Q——C—— Street, you may see in the corner two poor women in one bed, stricken with fever (one died two days after I saw them), mother and daughter. The husband of the daughter, who maintained them both, had been

lost at sea a little while before, in a ship so loaded that when Mr. B——l, a Custom House officer who had to go on board for some reason while she was lying in the river, was told, 'She's yonder; you can easily find her, she is nearly over t'head in the water,' Mr. B——l told me, 'I asked no questions, but stepped on board; this description was quite sufficient.'

"Mrs. R——s, H——n Place, told me her young brother was an orphan with herself. She said her sister brought him up till she was married. Then her husband was kind to him, and apprenticed him to the sea. He had passed as second mate in a sailing ship, but (he was a fine young fellow—I have his portrait) he was ambitious to 'pass in steam' also, and engaged to serve in the S—— ship, leaking badly, but was assured on signing that she was to be repaired before loading. The ship was not repaired, and was loaded, as he told his sister-mother, 'like a sand-barge.' Was urged by his sister and her husband not to go. His sister again urged him as he passed her door in the morning. He promised he would not, and went to the ship to get the wages due to him. Was refused payment unless he went, was over-persuaded and threatened, and called a coward, which greatly excited him. He went, and two days afterwards the ship went down. Her husband and Mrs. R——s also told me that he and his wife 'had a bit crack,' and decided to do all they could to 'persuade Johnnie not to go.' The young man was about twenty-two.

"Mr. J—— H——l told me that the captain was his friend, and the captain was very down-hearted about the way in which she was loaded (mind, she was loaded under the owner's personal supervision). The captain asked him (Mr. A——) to see his wife off by train after the ship had sailed. She, poor soul, had travelled to that port to see him off. The captain said to him, 'I doubt I'll never see her more!' and burst out crying. Poor fellow, he never did see her more.

"Now come with me to 36, C——, and see Mrs. J——e R——e. She is a young woman of superior intelligence, and has a trustable face—very. She may be about seven-and-twenty. She lost her husband in the same ship. He was thirty years of age, and, to use her own words, 'such a happy creature; so full of jokes.' He was engaged as second engineer, at £4 10s. and board. 'After his ship was loaded he was a changed man; he got his tea without saying a word, and then sat looking into the fire in a deep study, like. I asked him what ailed him, and he said, more to himself than to me, "She's such a beast!" I thought he meant the men's place was dirty, as he had complained before that there was no place to wash. He liked to be clean, my husband, and always had a good wash when he came home from the workshop, when he worked ashore. So I said, "Will you let me come on board to clean it out for you?" And he said, still looking at the fire, "It ain't that." Well, he hadn't signed, only agreed, so I said, "Don't sign, Jim," and he said he wouldn't, and went and told the engineer he shouldn't go. The engineer "spoke so kindly to him," and offered him 10s. a month more. He had had no work for a long time, and the money was tempting,' she said, 'and so he signed. When he told me I said, "You won't go, Jim, will you?" He said, "Why, Minnie, they will put me in gaol if I don't go." I said, "Never mind, you can come home after that." "But," said he, "they called me a coward, and you would not like to hear me called that."'

"The poor woman was crying very bitterly, so I said gently, 'I hope you won't think I am asking all these questions from idle curiosity;' and I shall never forget her quick disclaimer, for she saw that I was troubled with her: 'Oh no, sir; I am glad to answer you, for so many homes might be kept from being desolate if it was only looked into.'

"I ascertained that she is 'getting a bit winning for a livelihood,' as my informant phrased it, by sewing for a ready-made clothes-shopkeeper. She was in a small garret with a sloping roof and the most modest fireplace I ever saw; just three bits of iron laid from side to side of an opening in the brickwork, and two more up the front; no chimney-piece, or jambs, or stone across the top, but just the bricks laid nearer and nearer until the courses united. So I don't fancy she could be earning much. But with the very least money value in the place, it was as beautifully clean as I ever saw a room in my life.

"I also saw a poor woman, who had lost her son aged twenty-two. She too cried bitterly, as she spoke with *such* love and pride of her son, and of the grief of his father, who was sixty years of age. Her son was taken on as a stoker, and worked on the ship some days before she was ready for sea. He did not want to go when he saw how she was loaded. She looked like a floating wreck, but they refused to pay him the money he had earned unless he went, and he too was lost with the others.

"Just one more specimen of the good, true, and brave men we sacrifice by our most cruel and manslaughtering neglect. This time I went and called upon an old man I knew, and, after apologising for intruding upon his grief, I asked him to tell me if he had any objection to tell me if his son had had any misgiving about the ship before he went. He said, 'Yes, I went to see the ship myself, and was horrified to see the way in which she was loaded. I tried all I could to persuade him not to go, but he'd been doing nothing for a long time, and he didn't like being a burden on me. He'd a fine sperret, he had, my son,' said the poor old man.

"Here a young woman I had not observed (she was in a corner with her face to the wall) broke out into loud sobs and said, 'He was the best of us all, sir—the best of the whole family. He was as fair as a flower, and vah-y canny-looking.'

But it is not merely rotten hulks which may become coffin-ships: many superior vessels are woefully deficient in accommodation for the sailor's comfort. He may, and often does, wade to his bunk through water, and the fore-castle is too often a miserable hole, full of dirt and filth, where the men are packed like herrings. The food provided is principally "salt horse" and "hard bread," *i.e.*, sailor's biscuit of the most inferior description; and when scurvy ensues, as a natural consequence of exposure to damp and cold, with poor living superadded, the very lime-juice, which is nearly worthless if not pure, is found to be a miserable imitation or grossly adulterated with citric acid, which, strange as it may appear, has no anti-scorbutic properties. In the Russian and French mercantile marines there is little or no scurvy, in consequence of the pretty general use of common sour wine, which in some degree makes up for the lack of fresh vegetables. And in French mercantile ships the sailor may at any time demand the same rations as

those served out in the navy of the Republic. Owing to the carefully prepared dietary of our Royal Navy, scurvy has entirely disappeared, except in extreme cases of exposure and lack of precaution, as in the late Arctic Expedition.*

"In the West India Docks, which contain vessels trading to the West Indies, I observed a very different class of ships. Some are large and well supplied with provisions, but the majority are small, with wretched accommodation, badly manned, provisions indifferent in quality and deficient in quantity. Even in the larger vessels there is not that care taken of the men, and that amount of attention paid to their quarters and to the nature of their provisions, as in the ships belonging to the owners engaged in the East Indian and China trade. Captain Henry Toynbee strongly advocates the better ventilation and comfort of the forecastles, which he thinks should be under the control of Government. He has himself seen forecastles and seamen's chests in first-class ships black from the gas which rises from the cargo, and which smells like sewage, which is especially the case in sugar ships. Captain Toynbee informed me a day or two since that he had actually seen a place containing two packs of foxhounds and three horses, which received half its ventilation by a hatch which opened into the sailors' forecandle!

"In the Commercial Docks are to be seen both English and foreign ships, varying in size and class, most of which are in the timber trade, and have arrived from Norway, Sweden, or Memel, or the Baltic. The number of patients taken from ships in these docks to the *Dreadnought* hospital ship usually exceeds that from any other dock; but the cases are those not of scurvy, but consumption, bronchitis, and other chest diseases, which occur not so frequently in English sailors as in Norwegians, Swedes, and Russians—a fact due more, I think, to national predispositions than to hygienic conditions. In ships belonging to northern countries the provisions are abundant and good, the men's quarters are roomy, and there is nearly always a house upon deck in which there is a fair amount of space and good ventilation. The hygienic condition of the men on board Swedish and Norwegian ships is far superior to that of the ships of our own country; the chief fault is the extremely dirty and lazy habit of the men themselves, who allow filth of all kinds to accumulate in the deck-house and galley, without taking the slightest trouble to remove it. In English ships belonging to owners in the timber trade the state of things is disgraceful; a house on deck is an exception, and the men live and sleep in a small, close, ill-ventilated hole called a forecandle. The quality of provisions varies in different ships, some owners being more liberal than others; most of the men, however, live upon salt meat and biscuit, and sometimes a little salt fish. Timber in itself is considered a healthy cargo, but the ship is in most cases so overlaid that the forecandle is very much reduced in size—too much so, considering the number of men that form the crew; these have either to remain on deck exposed to wet and cold, or have to breathe the foul atmosphere of a small forecandle, in which are stowed rusty chains, wet ropes, and all kinds of animal decaying matter.

The vessels used for the coal trade are now principally screw steamers, though there are

* An excess of that very aliment, the absence of which produces scurvy, will also induce disease. Thus, the negroes of the West Indies live too exclusively on vegetables, and disease follows, the remedy for which is usually *red herrings*—herrings salted and smoked till they are as red as copper.

still many of the old class, generally found lying between Blackwall and Woolwich. Our authority describes them as follows:—They “are of small size (varying from 150 to 300 tons), and are built as sloops, schooners, or brigs. The majority are brigs; a visit to two or three presents a view of a state of things which is common to all. A collier brig is generally worked by a captain and a mate, who live in a small dirty cabin, and by four men and a boy, who live and sleep in the most miserable of forecastles. This fore-castle is very small, and so low that no person of ordinary stature can stand upright in it. It is dark, and the only approach is by a very small hatchway. It generally contains a quantity of old ropes, some rusty chains, a large tub of grease, and some damp canvas. These things, together with three or four dirty hammocks, take up the whole space, and it is only from sickness and the most urgent necessity that the sailor remains there for any length of time. So old and ill-constructed are some of these colliers, that in rough weather the fore-castle is deluged with water. This condition of things is made much worse by the negligence of the sailor himself, for it seems to be a rule that the cook, instead of throwing over the side of the ship the refuse of material used for food, as dirty water, potato parings, &c., deposits these with great care in some corner of the fore-castle. No attention is paid by the captain to the sanitary state of the ship; during the voyage, which is often a rough one, he is engaged in working the vessel, and while she is in harbour he is on shore waiting upon the owners of the vessel, or transacting their business in the Coal Exchange. I was informed the other day by a friend, who was engaged during the recent cholera epidemic as a sanitary inspector, that a patient afflicted with cholera was taken to the Belleisle in the month of September, who had been lying in his hammock for two days prostrate, and with much vomiting and purging, and during this time the captain, although on board, was not aware of the man’s absence from deck. The provisions supplied in this class of ships vary both in quality and quantity; the supply, though, is very deficient, and there is an almost universal complaint among the men and boys that they have not sufficient to eat. Although coasting voyages last not longer than three or four days, and the ship is very seldom far away from land, the men scarcely ever get fresh meat; the supply always consists of salt beef—the coarsest parts of the animal. To this I may add that the biscuits are of the worst description, very hard, and are masticated with the greatest difficulty. The quality of provisions depends entirely upon the liberality of the captain, who not unfrequently has a share in the ship, and whose interest is consequently concerned in keeping down all expenses; the comfort of the men seems to be made subservient to pecuniary advantages.”

And now—for a change—to good owners. There are many, and the present writer believes fully that the average ship-owner not merely wishes to preserve his ship, but all on board—crew, passengers, and cargo. The proprietor of a grand vessel feels, as he should, that her loss is a very great deal more than his loss. Dr. Stone, some years ago made an inspection of the docks, and his remarks, published in our leading journal,* deserve to be recorded. He says:—

“From conversations I had with many of the officers and crews engaged in Green’s, Wigram’s, Smith’s, the Black Ball, and other services, and from what I saw, I judged

* The Times, January 14th, 1867.

that the provisions are good and ample; and I was informed that scurvy is seldom met with in the vessels belonging to these owners, owing to the fact of the masters not being content with simply ordering the crew to take a certain quantity of lime-juice every day during the ship's voyage, but satisfying themselves by personal inspection that the juice is actually drank. Outside the dock gates, and off Plaistow Wharf, may occasionally be seen American vessels which have arrived with petroleum. An inspection confirmed the opinion I have always entertained regarding the superior accommodation met with in the vessels of the United States; they are large, well manned, and supplied with good provisions. The berths and sleeping quarters are better even than those in large East Indiamen; every ship has a raised house on deck, spacious, well ventilated, and clean, which, being furnished with a stove, the men are thereby enabled in wet weather to dry their clothes, which is of course a great preservation of their health. The general condition of the men is far better than that of the sailor of any other nation. Although the cruel treatment exercised by the officers on American ships is proverbial, there is seldom any difficulty in obtaining a good crew. The masters in the commercial marine of America pride themselves upon the general appearance of their crews, and they say that it is the best economy to give them good and abundant food, and to pay rigid attention to their sleeping quarters."

Sometimes it is the cargo itself which is a fatal cause of disease or death. Ships carrying large quantities of minerals, sulphur, petroleum, &c., sometimes smell intolerably, but are not considered unhealthy places of residence. But how of guano and other manure ships? In one of Dr. Stone's letters to the *Times*, published in 1867, he says:—"The most objectionable and unhealthy cargoes brought into the Thames are those consisting of the different kinds of manure. A large bone trade is carried on in the port of London; barges are constantly passing up and down the Pool laden with bones collected from bone-dealers and the slaughter-houses of London. Many of the bones are not dry, but are covered with decomposing flesh. The smell is very bad, and is not limited to the immediate neighbourhood of the barge itself, but may be carried for a long distance. These bone barges discharge their cargoes into some small coasting ship. . . . The sailors and bargemen engaged in work of this kind suffer very much: they are nauseated by the offensive smell; their appetites fail entirely; they consume large quantities of spirit; and, as a consequence, are invariably attacked by diarrhoea, accompanied with vomiting. In the summer time it is a matter of surprise how anyone can remain, for a short time even, in the neighbourhood of the vessel; a thick offensive steam is constantly rising from the bones, and the decks and rigging are covered with large blue flies. When the vessel (generally a small, very old, and ill-manned schooner) puts to sea, the hatchways are kept open, so as to give free egress to the gaseous products of decomposition and to prevent the ship from taking fire."

Many have been the instances of ships' decks being blown up by the gas from coal becoming ignited, and loss of life has been caused thereby. Gunpowder may, under certain conditions, become a most dangerous cargo. Take the case of the *Great Queensland*, which was blown up entirely, leaving no survivors to tell the tale. The cause is not far to seek when we learn that two tons of impure wood powder, sufficient of itself to burst the ship

to pieces, and from its condition likely to explode, were stored in the same compartment with thirty tons of ordinary black gunpowder.

Compulsory survey and no overloading were Mr. Plimsoll's main remedies for the prevention of the terrible loss of life in the mercantile marine. He cites two cases of great firms—the first engaged in the coal carrying, and the second in the guano trade—who do not permit overloading, and the first, in fifteen years had not, out of a large fleet of steamers, lost a single vessel, although they made from fifty to seventy double trips per annum. And yet the voyage from the Thames to the Tyne is more dangerous than an over-sea voyage. There are a whole crowd of dangerous shoals off the Essex coast alone, to be avoided or steered between, as the case may be, as soon as the ship leaves the Thames, followed by equal dangers on the Suffolk and Norfolk coasts. The latter sands are all under water even when the tide is at ebb, but there is not water enough on them to float a ship; hence the losses when ill-found, overloaded, and undermanned vessels get on them. Further north there are others, and then come the dangerous rocky coasts of Yorkshire and Durham. The second case deserves particular mention. About the year 1860, the firm of Anthony Gibbs and Co., of London, took a contract from the Peruvian Government to charter and load ships from the Chincha Islands with guano, and as many as three or four hundred ships left those islands annually for different parts of the world. At first they were allowed to load and proceed to sea without inspection or surveying, and were permitted to load as deeply as the masters thought fit. What was the result? Accidents and losses were reported every few days, and many of their ships foundered at sea, some with all hands on board. When the head of the house at Lima, Peru, introduced proper surveying before loading, to discover what repairs were needed, &c., allowing no overloading, and not permitting the ships to go to sea without full inspection of her pumps and gear, a sudden and wonderful change took place, and for years after not one of these ships foundered at sea.

We often hear and read of "unclassified" ships; does the reader understand the term? Nearly all new ships are fit to take valuable merchandise—silks, tea, provisions, cloth, or what not; and if "tight," *i.e.*, not leaky, would be classed A1 by Lloyd's Committee. The letter refers to the ship proper; the numeral to its equipment, rigging, boats, cables, anchors, &c. The term or period for which she is classed varies with the quality and kind of timber employed, and the quality of the workmanship is also taken into account. A ship built mainly of hemlock, yellow pine, beech, or fir, will generally be classed A1 for four or five years; of elm or ash five to seven years; and so on through various grades, until, if built of English oak or teak, she may be rated nine to twelve years. All are subject to the "half-time" survey of a strict character; thus a ship classed A1 for eight years is examined by Lloyd's surveyors at the end of four years. "She may again, at the request of the owner, be examined for continuation, *i.e.*, to be continued A1 for a further term; usually two-thirds of that originally granted. She may again and again be re-examined for continuation, or, if she have meantime gone into a lower class, be examined for restoration to the character A, but each of these surveys is increased in thoroughness and stringency as the age of the ship increases. When from age she ceases to be entitled to the character A in the opinion of Lloyd's surveyor, but is still tight enough and strong enough to carry valuable merchandise to any part of the world, she is classed

A red, usually for a term of half or two-thirds the original term granted her in the first character. . . . When from increasing age she is no longer fit to carry valuable goods for long voyages, she falls back into class black, diphthong $\mathcal{A}$; while in this class she is deemed fit to carry the same class of goods, but only on short voyages (not



EXTERIOR OF LLOYD'S.

beyond Europe). And when after survey and re-survey at intervals, as before, she is no longer fit to carry valuable goods at all, she falls into class E, and is deemed fit only to carry goods which sea-water won't hurt, as metallic ores, coal, coke, &c." And so it goes on till she is classed 1; and when she is run through her terms here she is said to have run out of her classes: to be, in fact, an "unclassified ship." The lettering is slightly varied for iron ships. But it must be remembered that all this submitting to survey is entirely optional, and that a newly-built ship may be "unclassified" also.

In the former case—a ship which has run out of all its classes—the vessel is usually fit for nothing more than a river trip, and ought really to be broken up. It is then that the disreputable shipowner steps in and purchases her. Happy is it for its poor crew if she does not prove their coffin!

It may be asked, as Lloyd's will now have nothing to do with such a rotten tub, How does the owner get anyone to insure it? It is generally done by mutual insurance clubs formed among these very owners, though not exclusively. Plimsoll says: "It almost



INTERIOR OF LLOYD'S.

seems as if there was a race who should lose his ships first on the formation of a new club, so great are the sums the members are called upon to pay as premium;" and such clubs are constantly failing.

To be classed A 1 in anything is good, and, as applied to a ship at Lloyd's, means, as we all know, that the vessel is first-class in every particular. But what is Lloyd's? Many readers would find it difficult to give a clear answer to this query. The secretary of that institution told M. Esquiros, when that distinguished writer was visiting England, that he received many business letters addressed to "Mr. Lloyd," and we all know there was long, in fact, a celebrated Lloyd's Coffee-house in the City, where the merchants interested in maritime matters used to congregate. A poem, "The Wealthy Shopkeeper, or Charitable Christian," published in 1700, alludes to the establishment, and the writer adds, as an addendum, that the London merchant at that time never missed "resorting

to Lloyd's to read his letters and attend sales." Later, Steele and Addison both spoke of it in the same light. "The veritable, personal Lloyd," says Esquiros, "as we see, has made a great deal more noise in the world after his death than he ever did during his lifetime." The name of the coffee-house keeper has become inseparably connected with the greatest maritime institution of the world.

The original Lloyd was a wonderfully good example of a pushing London citizen. Little was, speaking in these later days, known of Edward of that ilk till Mr. Frederick Martin unearthed, in the vaults of the Royal Exchange, a long-forgotten series of its archives. Then he found "huge stores of manuscript papers and immense leather-cased folios, partly singed in the great fire which, in 1838, destroyed the Royal Exchange above them." Now we know that Lloyd, early in the reign of Charles II., kept a coffee-house in Tower Street, and contrived to make it the gathering point for the underwriters, who had been previously scattered all over the city. This house was near the Custom House, the Navy Office, and the Trinity House, as well as to the Thames "below bridge," and the position was obviously a good one for the purpose. Having surrounded himself with a growing connection in Tower Ward, Lloyd found himself in a position to approach the haunts of the leading merchants and bankers, and we find him in 1693 securely established at the corner of Lombard Street and Abchurch Lane, near the spot where the Lombard Street post-office now stands. Here he held periodical auction sales 'by the candle,' and started a weekly paper devoted to maritime affairs, the first of its kind: indeed it was, saving the *London Gazette*, the only London newspaper yet in existence. But he now met a severe blow, for, as we learn from Macaulay, "the judges were unanimously of opinion that this liberty (of printing) did not extend to gazettes," and that, by English law, no man not authorised by the Crown had the right to publish political news. The said political news in this case consisted of mere headings and brief paragraphs, as, "Yesterday the Lords passed the Bill to restrain the wearing of all wrought silks from India," or that they had received a "petition from the Quakers." Lloyd had to succumb and stop the publication, but his sales of ships and cargoes increased, so that in fifteen or twenty years Lloyd's had become the recognised London centre of maritime business, including marine insurance. From this comparatively small beginning has sprung the all-powerful organisation whose agents are to be found in every part of the habitable globe.

"When," says a writer already quoted, "I landed, about three years back, upon one of the group of rocks lost in the bosom of the waves, and which are called the Scilly Islands, there was only one thing which brought London to my mind, and that was the name 'Lloyd's, in letters of brass, on the door of one of the least poor-looking houses. I might have gone much further afield, into some of the still wilder islands of the Old or New World, and there, even at the very ends of the earth—provided only that there was a town or port of some sort—I should have found an agent of this English society. The definition of Lloyd's which was given by a City merchant can now be better understood by us. 'It is,' said he, 'a spider planted in the centre of a web which covers the whole sea, and the shipwrecked vessels are the dead flies.'"

* "English Seamen and Divers."

"The loose connection existing between the underwriters of London," says the leading authority on the subject,* "as frequenters of the same coffee-house, where they carried on their business transactions, formed itself into a final 'system of membership' by transmigration to the Royal Exchange in 1774. The author and leading spirit in this all-important movement, which had far-reaching consequences for the commerce, not only of England, but for that of the whole world, was Mr. John Julius Angerstein, a native of St. Petersburg, but of German extraction, descended from an old and highly respected family of merchants." The writer goes on to show how young Angerstein, from junior clerk, had risen to be a successful merchant and underwriter. He became one of the most honoured of those who assembled at Lloyd's Coffee-house, as he was a most sagacious and far-seeing man, of unimpeachable integrity, and when the movement for obtaining a suitable home for the underwriters was mooted he was its greatest supporter. He became virtually the leader in the whole matter, and seventy-nine underwriters agreed to pay one hundred pounds each to start it fairly. Thus was the "New Lloyd's," as it was then called, first organised. It is not, nor ever has been, an insurance *company*, but rather a fraternity of merchants, shipowners, bankers, and capitalists subscribing for a place where they could meet and transact business. It is a maritime exchange. But each man is guided by his own intelligence, and must measure the extent of business which he undertakes by the standard of his personal capital.

"The English merchant especially," says Esquiros, in his charming work, "having so many bonds of union with the ocean, can hardly expect to always have tranquil sleep. Let the south-west squalls be ever so little let loose, the ruin of his house and family is hoarsely muttered through his dreams. Oh, if he could only see from afar the good ship in which he has risked the better part of his fortune! In the morning he rushes to Lloyd's, the fountain-head of all marine news. Nothing, either in his face or conduct, shows the least emotion—he has the art of veiling his features with a mask of indifference; but what a tempest of anxiety rages under this outward calm! He asks himself a thousand questions: What does the telegraph say? What ships have touched at distant ports? What are the names of those which have reached England? To all these questions and many more he finds answers affixed to the walls of the vestibule. There the lists and advices give exactly the maritime bulletin of the day. But the critical moment has yet to come; this man, whose whole fortune perhaps is on the sea, has not at present consulted the 'Loss Book,' or, as it is also called, the 'Black Book.'"

This gloom-inspiring volume is placed by itself on a high desk, and each can refer to it in turn. It is, of course, written by hand, and contains every day the wreck record, briefly told. Laconic as is the formal record—the name of the ship, destination, nature of cargo, coast on which shipwrecked, and so forth—there have been as many as twelve pages blackened with the sad summary of the losses announced by telegraph during one day. "In each of these announcements—frigid and taciturn as fate itself—the mind may conjure up many a sad drama. How many human lives are there

* Frederick Martin: "The History of Lloyd's and of Marine Insurance in Great Britain."

sacrificed? This is often the fact of which the 'Black Book' takes but little notice; the matter with which it has exclusively to deal is the property insured against the perfidy of the sea. Who was the insurer? and who has lost? These are the great questions. It is also remarkable, after a storm, to see with what anxious and fidgety hands some of the insurance speculators turn over the pages of this sibylline book." And no wonder: for the underwriter* is a speculator who is taking long odds against a terrible gambler—the ocean.

The Underwriters' Room at Lloyd's to-day is a splendid hall, with Scagliola columns and richly decorated ceiling, and mahogany tables placed at intervals all round the room. "What an animated, yet demure, hubbub is here!" says the French writer before quoted. "One might fancy that the sea, with the thoughts of which every brain is occupied here, had imparted some of its agitation and uproar to the business world. The current of news, transactions taking place, and chat going on, runs from one end of the hall to the other with a kind of deep murmuring roar." Those going to and fro are of two very distinct classes—the insurers of ships and the insurance brokers. The latter have become very necessary, the reason being as follows:—The merchant who wishes to insure a ship, or a certain kind of merchandise that he is about to export, may by no means always meet the underwriter who is prepared to take that particular risk. While he is trying to insure his ship she may have already started—may even be at the bottom of the sea. In the latter case a delay might be fatal, for the news once arrived that his ship had been wrecked, he could not, of course, effect any insurance. He therefore goes to a broker who knows the habits of the place, and probably the very underwriter whose means or known predilections for certain forms of investment will make him desirous of taking the risk.

The business of Lloyd's is conducted by a committee of twelve influential members, while the working staff includes a secretary, clerks, and a staff of assistants technically known as "waiters," which would make it seem as though the odour of the original Lloyd's Coffee-house still clung to the body. The funds of Lloyd's Association, as it might be termed, are large, and are used to great advantage: partly in charity bestowed upon deserving, though unfortunate seamen, and partly in rewards, in various forms, to special cases of merit. It costs an underwriter £50 entrance fee and £12 annual subscription to belong to it; the brokers are let off for about half the above rates; an ordinary subscriber pays £5 per annum for the privilege of entering the rooms of the Association. We have now traced the history of the greatest maritime company of the world, one that could only belong to a great nation. No other could devise, much less support it.

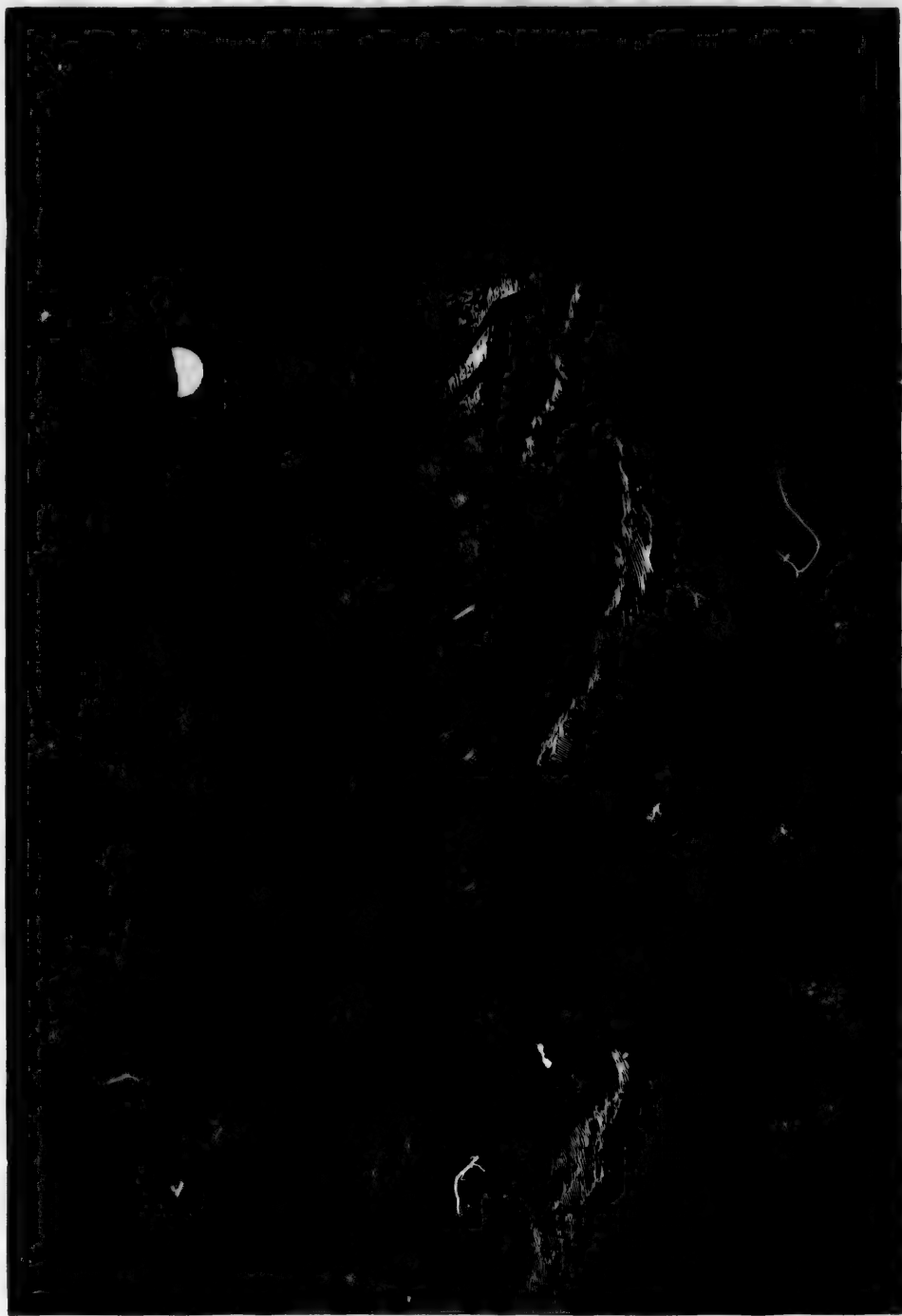
* The term is applied exclusively to maritime insurers, although, strictly speaking, anyone signing a bond is an underwriter.

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THE "GREAT EASTERN" IN A OFF CAPE CLEAR.



MR. I. K. BRUNEL.



MR. SCOTT RUSSELL.

(From a Photograph by Mayall, 1858.)

CHAPTER VIII.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

The Largest Ship in the World—History of the *Great Eastern*—Why she was Built—Brunel and Scott Russell—Story of the Launch—Powerful Machinery Employed—Christened by Miss Hope—Failure to move her more than a few feet—A Sad Accident—Launching by inches—Afloat at last—Dimensions—Accommodations—The Grand Saloon—The Paddle-wheel and Screw Engines—First Sea Trip—Speed—In her first Gale—Serious Explosion on Board of Hastings—Proves a fine Sea-boat—Drowning of her Captain and others—First Transatlantic Voyage—Defects in Boilers and Machinery—Behaves splendidly in Mid-ocean—Grand Reception in New York—Subsequent Trips—Used as a Troop-ship to Canada—Carried out 2,000 Soldiers—An eventful Passenger Trip—Caught in a Cyclone Hurricane—Her Paddles almost wrenched away—Rudder Disabled—Boats Carried Away—Shifting of Heavy Cargo—The Leviathan a Gigantic Walf on the Ocean—Return to Cork.

MANY competent authorities doubt whether the ships of the future will be so very much larger than the largest now in use, but it is one of those questions on which it is idle to theorise, and absurd to dogmatise. The greatest ship of this or any other age has not proved a success, except for some very special purposes for which no other vessel would have proved available. The history of the *Great Eastern* is one of interest to all, and especially to too sanguine and over-ambitious individuals and companies.

In reply to an advertisement from the Admiralty in 1851 for the conveyance of the East Indian and Australian mails, was an application from a new organisation, the Eastern Steam Navigation Company. This offer was declined, and then some of the directors, on the suggestion of Mr. I. K. Brunel, the great engineer, recommended the construction of a

steam-ship of extraordinary dimensions to trade with India. Having made calculations that the big ship intended could maintain a speed of fifteen knots an hour, there was, in their judgment, no doubt that they would attract a proportion of the traffic so handsome as to afford full cargoes both outward and homeward. Many of the original shareholders withdrew, but a large number held firm. Brunel argued that there need be no limit to the size of a ship, except what quality of material imposed. He further urged from scientific theory and actual experience, that upon the "tubular principle," which provided the greatest amount of strength of construction with any given material, it was possible to construct a ship of six times the capacity of the largest vessel then afloat,* and one, too, that would steam at a speed hitherto unattainable by smaller vessels. Mr. Scott Russell, the eminent ship-builder, shared these views. The idea of having two sets of engines and two propellers—paddle-wheels and screw—was solely due to Mr. Brunel, as was also the adoption of the cellular construction, like that at the top and bottom of the Britannia Bridge. Her model in general construction was like that of the ships built by Scott Russell, on the principle of the "wave line," which he had carried out during the previous twenty years. In spite of much virulent criticism, the construction of a 25,000 ton vessel was commenced on May 1st, 1854, in Scott Russell's yard, at Millwall, on the north side of the Thames.

Novel as was the construction of the ship, the mode devised for her launch was no less novel. As her immense length would render it impossible to launch her in the usual manner and by the force of her own gravity, she was built lengthwise to the river on cradles, which carried her upright and dispensed with "shores." These cradles were made to travel on a double series of "ways," each 120 feet in breadth, which were carried to low-water mark. The ways were 300 feet in length, with an incline of one in twelve. At the stem and stern were placed a powerful hydraulic ram to give the first start, and when she was once in motion her progress was to be kept up in the following manner. On the river-side four large lighters were moored in the tideway, and were to work with crabs and sheaves or pulleys upon chains, fastened to the vessel amidships. Two lighters were also moored at the stem and two at the stern of the vessel. The chains passing from the ship to these latter were returned again on shore, so as to be worked with a double purchase. Small stationary engines on land were to be used to haul on these, making a force available to pull the vessel off the shore. The calculations, as the event proved, were made on a false notion of the amount of friction to be overcome, and the attention of the engineer had been chiefly directed to prevent her dashing into the water with too great a speed. For this purpose two powerful drums had been constructed, to which the cradles were attached by enormous sheaves of cast iron, expressly cast for this purpose, and weighing five tons each. One sheave was fastened to each cradle, and wrought-iron chain cables of the largest size connected these with two other sheaves, each of which was screwed to the drum which was to pay out the chain and, in fact, regulate the whole operation. The axle of the drum was set in a frame of iron, while

* See Lindsay's "History of Merchant Shipping," Timbs' "Year Book of Facts in Science and Art," and Irving's "Annals of Our Times." She is still nearly *five* times the size of any merchant vessel afloat; as we have seen, the Inman steamer, *City of Berlin* (5,500 tons), comes next to her. There are ironclads nearly half her tonnage.

around its outer edge passed a band of iron, to work in the manner of a friction-clutch, or break. This, with the aid of strong iron levers twenty feet long, brought such a pressure to bear upon the discs of the drum as to entirely stop them in case of the chain being paid out too fast. Everything being thus prepared that human ingenuity could devise (as was supposed), the launch was fixed for the 3rd of November, 1857. On that day, although the sight-seeing public did not congregate in large numbers, and the scaffolding erected on many points was untenanted, yet there was a swarm of well-laden craft of all kinds on the river, and crowds on both its banks and around the yard. The engineers and men of science mustered strongly, not only from all parts of England, but from Germany, France, America, and Russia. The Comte de Paris, the Duke d'Anmale, the Siamese Ambassadors, and some of the Lords of the Admiralty, were the most conspicuous persons present.

At half-past one Miss Hope, the daughter of the chairman of the company, appeared, and dashing a bottle of wine on the bows, bade the Leviathan, as she was originally called, "God speed!" amid the cheers of those assembled. In a few moments afterwards the word was passed to commence the launch. At the signals the lighters slowly but steadily commenced to haul taut their tackle from the river. This strain appeared to have no effect on the vessel. It remained stationary for about ten minutes, when the peculiar hissing noise of the hydraulic rams at work to push her off was heard. It should have been mentioned that each of the drums was constructed so as to be turned by ordinary windlasses, in order to wind up the slack chain between the drums and the cradles; otherwise, if any slack were left when the hydraulic rams started the vessel, it would run it rapidly out, and dreadful consequences might ensue. When the "rams" began to work, the order was distinctly given to "wind up" the slack between the drum and the cradle. This was done at the forward drum; but, unfortunately, at the stern of the vessel the men did precisely the reverse, and uncoiled more slack chain. Suddenly there was a cry "She moves! She moves!" The fore part of the vessel slipped, and the stern rushed down some three or four feet in the space of a couple of seconds, in consequence of the slack chain from the after drum offering not the least check. In an instant the strain came upon the drum, which was dragged round, and, of course, as that was connected with the windlass by multiplying wheels, the latter turned round some ten or fifteen times for every foot the drum moved. The men at the windlass madly tried to hold it, but the heavy iron handle flew round like lightning, striking them, and hurling five or six high into the air as if they had been blown up by some powerful explosion. A panic seemed to spread as this disastrous accident took place, and the men stationed at the tackle and fall of the lever next the windlass rushed away. Fortunately for the lives of hundreds of the spectators, the men at the lever at the other side of the drum stood firm, and, hauling on their tackle, drew their lever up, and applied the break on the drum with such terrific force that the ship instantly stopped, though she seemed to quiver under the sudden shock as if she had received a violent blow. The injured men were then carried off to a neighbouring house, where one of them shortly died. When the wreck of the accident had been cleared away, it was determined to make another effort to launch the vessel, but without effect; for all pressure that the "rams" could apply was found insufficient to move her. After straining for

some time, the piston-rod of one of the hydraulic rams gave way, and this accident put an end to the attempt to launch the great ship for this day.

Numerous hydraulic machines were now borrowed and fixed, fresh tackle applied, and many novel and ingenious expedients adopted. It was thought necessary to await the next spring tides, in order that the monster when she should be launched might find a sufficient depth of water. The precaution was needless; many weary weeks were to pass before she was afloat. On some days, when every exertion seemed vain, she would capriciously slip a few inches at the stem or stern. After a long interval, another small distance would be accomplished; sometimes a day's journey would be three or four feet, sometimes twenty or thirty. Finally, by continued perseverance, she was brought down the ways until she was immersed some eight or ten feet at high water, and then, as the final launch was certain of accomplishment, it was thought desirable to leave her till the high tides of January should rise so far as to aid materially in her final flotation, and make it practicable to tow her to a secure berth, where her last fittings could be put in, and she could be made ready for a voyage.

With the spring tides the water rose under the great ship nearly eighteen feet; and on the 31st January she gave such signs of buoyancy that it was resolved to float her on that day. The tide ran up with unusual swiftness, and as the flood relieved the weight upon the launching ways some of the hydraulic machines were set to work, for the last time, to push the monster as far as possible towards the centre of the river. She moved easily; and at half-past one the men in the rowing boats stationed alongside observed that she no longer rested on the cradles—that she was, in fact, afloat. The tugs fastened to her began steaming ahead, and showed that at last she was fairly under way. Then the cheers which arose from the yard and from the decks, from the boats in the river, and the crews of the ships at anchor up and down the stream, spread the great news far and wide; and thus, under the most favourable circumstances, the huge vessel commenced her first voyage on the Thames.

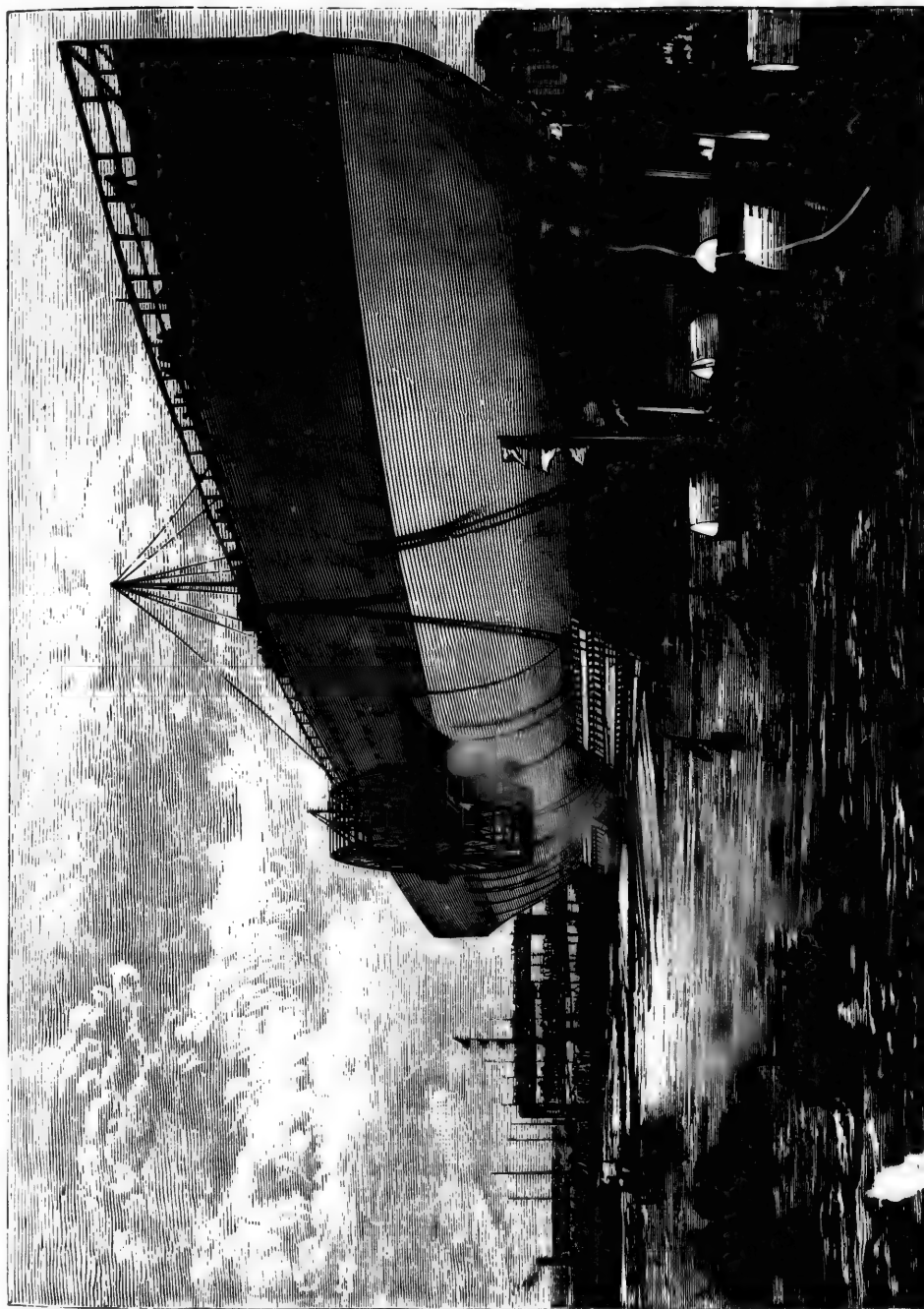
And now we must give some description of her internal arrangements and accommodations. The hull is divided transversely into ten separate compartments of 60 feet each, and rendered perfectly watertight by bulkheads, through which there is no opening whatever below the second deck. Two longitudinal walls of iron, 36 feet apart, traverse 350 feet of the ship. This mighty vessel was destined to afford accommodation for 4,000 passengers, viz., 800 first class, 2,000 second class, and 1,200 third class, and a crew of 400. The series of saloons, which were elegantly fitted and furnished, together with the sleeping apartments, are situated in the middle of the ship, and extend over 350 feet of her length. The lofty saloons and cabins are very imposing, more resembling the drawing-rooms of Belgravia than ordinary cabins. The "Grand Salon" is 62 feet long, 36 feet wide, and 12 feet high, with a ladies' cabin, or rather boudoir, 20 feet in length. Massive looking-glasses in highly ornamented gilt frames decorate its sides. The strong iron beams overhead are encased in wood, the mouldings being delicately painted and enriched with gilt beading. Around two of the funnels which pass through this gorgeous apartment are large mirrors, with alternate highly ornamented panels, and at their base are groupings of velvet couches. The walls

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THE LAUNCH OF THE "GREAT EASTERN."

are hung with rich patterns in raised gold and white, and at the angles are arabesque panels, while sofas covered with Utrecht velvet, buffets of richly carved walnut-wood, carpets of surpassing softness, and *portières* of rich crimson silk to all the doorways, give an elegance to the whole far surpassing the gigantic toy ships of ancient monarchs. The paddle-wheel engines can be made to give 5,000 horse-power, and the screw-engines 6,000 horse-power; making 11,000 in all.

On the 9th September, 1859, the vessel, which had now been re-christened the *Great Eastern*, took her first trip from the Thames under the most favourable circumstances, the weather being very fine, with a light breeze of wind, and blue sky overhead. Starting with four tugs, two on the bow and two at the quarter, to guide her through the narrow parts of the river, after some delay and a few slight mishaps, she reached Purfleet, where she anchored for the night. At daylight on the following morning, she started for the Nore, where she arrived about noon, having attained a speed of thirteen knots an hour, though going only at half-speed, her engines making not more than eight revolutions a minute. From the Nore the *Great Eastern* proceeded successfully to Whitstable, where she anchored, getting under weigh there at a quarter past nine on the following morning, with a fresh breeze. After passing Margate she encountered a stiff gale, in which she appeared quite at ease when large ships were under double-reefed topsails, and small vessels were obliged to lie to. But an unfortunate accident occurred to her when off Hastings, through the explosion of one of her funnel-casings, causing the death of six men employed in the engineering department, injuring various others, and destroying nearly all the mirrors and other ornamental furniture in the grand saloon. No injury was, however, done to the hull or machinery of the vessel sufficient to prevent her proceeding on her voyage to Weymouth, which she reached without any further misfortune, on the afternoon of Friday, within the time anticipated for her arrival. On her arrival, the pilot who had been in charge of her from Deptford to Portland (Weymouth Bay) made an official report of her performances to the Company, confirming, in some measure, the glowing accounts in many of the public journals, and realising the sanguine expectations of the directors, though their hopes of profit had been somewhat damped by the accident which, apart from the loss of life, entailed an outlay of £5,000. The necessary repairs having been completed, the *Great Eastern* proceeded from Portland to Holyhead, but without passengers as originally contemplated. Starting at noon of the 8th of October she made the run to Holyhead in forty hours, at an average speed of close upon thirteen knots, or more than fifteen statute miles in the hour, having on some occasions attained a speed of fifteen knots an hour. But upon the whole the expectations that had been formed of her were disappointed. The paddles proved defective either in power or mode of fitting; and the utmost speed attained fell far short of calculation. It began to be suspected that the power of her engines was not proportioned to her tonnage, and the ship was found to roll considerably. It should have been mentioned that, whilst lying outside Holyhead harbour for the purpose of further trials, she became exposed to the full fury of the hurricane of the 26th October. In this terrific storm the ship behaved nobly, but was at one time in considerable danger of being driven ashore. She returned to Southampton, and was berthed for the winter in Southampton Water.

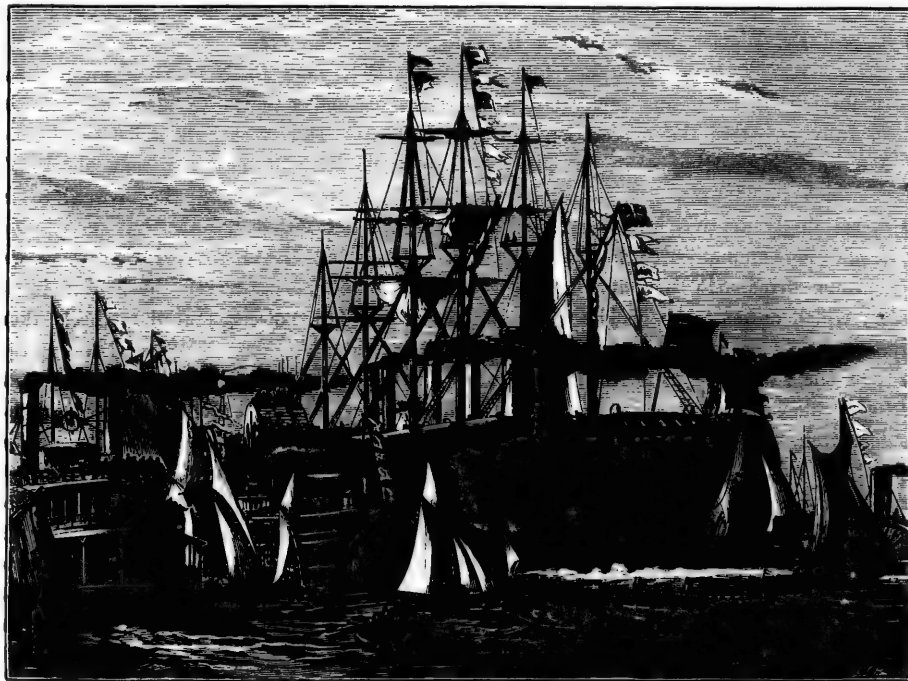
On the 21st January, the captain of the *Great Eastern*, Captain Harrison, was drowned in Southampton Water by the capsizing of a small boat carrying him from the ship to the town. The boat, which was fully manned by six picked seamen and the captain's coxswain, was seized in a sudden squall near the dock-gates, and upset before the trysail could be lowered. Boats were at once put off from the *Indus* to the rescue, but when Captain Harrison was reached, the body was floating a little under water, and life was quite extinct—death being apparently the result of apoplexy caused by the intense cold. The coxswain was found insensible close by, and survived only till the evening. A fine youth, son of the chief purser, was also drowned; the chief purser himself (Mr. Lay), and Dr. Watson were amongst those saved with the crew.

The *Great Eastern* made her first Transatlantic voyage to New York after a very successful but by no means rapid passage of ten days and a half. In many respects the vessel fully answered the expectations of her builders. Her vast bulk aided the fineness of her lines in cutting through the opposing waves without any apparent shock. To those which rolled upon her sides she rose with a easy swing, and they passed to leeward, seemingly deprived of their fury; others struck her with full force, but no vibration or shock was communicated to the vast mass. It was speedily discovered that there were two prime defects in her appointments—it was impossible to raise the steam in the boilers which animate the paddle-wheel engines to the full power; and the wheels themselves were not so placed as to act on the water with effect.

On the 21st, the power of the ship was put to a most trying test. A strong north-westerly gale had raised a rough sea. "It has always been said that she never could or would pitch, but the truth is this ship does just the same on a small scale that ordinary vessels in a sea may do on a very large one. The *Great Eastern* against a head sea makes a majestic rise and fall, where a steamer of 2,000, or even 3,000, tons would be labouring heavily, and perhaps taking in great seas over her bows. On this Thursday she dipped down below her hawse pipes. It was a fine sight to watch her motion from the bows, splitting the great waves before her into two streams of water, like double fountains, and to look along her immense expanse of deck as she rose and fell with a motion so easy and regular that the duration of each movement could be timed to the very second."

On the 23rd, the ship being off the banks of Newfoundland, the temperature decreased so rapidly that it was feared that floating icebergs were near, and the speed was slackened, and precautions taken against accident; and, on the 26th, when not more than 450 miles from New York, the ship ran into a dense fog, through which she had to feel her way. These circumstances materially affected the duration of the voyage. The most anxious part of the whole navigation was now at hand—the passage over the shoals and bars which impede the passage to New York harbour, and the ship was repeatedly stopped to take soundings. All dangers were boldly passed, and the dawn of the 27th showed the coast in a dim blue line, with the spit of Sandy Hook lying like a haze across the sea. The lighthouse was passed at 7-20 a.m., and the *Great Eastern* had completed her first Transatlantic voyage. From Sandy Hook the vessel passed into the harbour, stirring up the sand on the bar, but escaping all danger by the admirable readiness with which she

answered her helm. The advent of the great ship had been expected in America with an eagerness which cast into the shade even the interest taken in her at home. She was a great and startling "fact." Therefore, no sooner was her arrival telegraphed, than the bay was studded with yachts, schooners, and steam-ships, whose passengers marked every portion of her progress with vociferous cheers; all the ships were covered with flags, the bells rang out, the cannon roared, the wharfs and houses were crowded with enthusiastic welcomers. Even the Government Fort Hamilton fired a salute of fourteen



ARRIVAL OF THE "GREAT EASTERN" AT NEW YORK.

guns. The return voyage was uneventful. In May, 1861, she again started from Milford Haven for New York, on an ordinary passenger voyage, and made a very successful, but not very rapid, passage of nine days thirteen and a half hours, the greatest distance run in one day being 410 statute miles. She commenced the return voyage on the 25th May, and arrived off Liverpool in nine and a half days, running in one day 416 statute miles.

When civil war in the United States forced on the English Government the fact of the defenceless state of Canada, it was resolved to send out reinforcements with the greatest speed, and the *Great Eastern* was taken up as a troop-ship to convey 2,500 men, 100 officers, and 122 horses. In addition to these, were about 350 wives and children of the soldiers. She sailed from the Mersey on the 27th of June, and made her voyage with

such speed and safety that her real use appeared to have been discovered at last. This success inspired confidence, and when she was next announced to sail with passengers, nearly 400 persons engaged first and second-class berths. Among them were several parties, and an unusual proportion of ladies. A very considerable cargo was also sent on freight. She left the Mersey on the 10th September, and commenced her voyage with every prospect of success. But, when about 250 miles westward of Cape Clear, she was caught in a tremendous gale. She appears to have been in the very centre of a cyclone hurricane. In the midst of this whirlwind one of the forward boats broke loose. The captain ordered the helm to be put down, in order to bring the ship up into the wind, that the boat might clear the wheel. The ship refused to answer her helm. Some hand-sails were then set with the same object, but they were instantly blown to shreds. Soon a terrific noise was heard, and it was clear that something had gone wrong with her machinery. The waves had struck her paddles with such force that they were bent, and scraped the ship's side at every revolution, threatening to shear away her iron planking. Under these circumstances it was necessary to stop the paddle engines and trust to the propeller for progress. This, of course, did not add to the power of steering; for, if the helm was insufficient when the power was amidships, it was, of course, still less effectual when the power was all astern. The ship, therefore, lay exposed to the tremendous lashing of the sea, which ran mountains high. One by one the floats were struck away, and at daybreak the next morning nothing of the paddle-wheels was left except twisted iron rods attached to the shaft. Nor was this the extent of the misfortune. The stress upon the rudder, now that it had to control the entire length of the ship, was tremendous, and about 5.45 a.m., during a terrific sea, the top of the rudder-post, a bar of iron ten inches square, was wrrenched away. The ship had now entirely lost steerage power, and lay utterly at the mercy of the waves. She rolled tremendously. The hapless passengers were dashed from side to side; the cabin furniture broke loose, as well as the cargo, crushing everything they touched. In the hold, tallow-casks, weighing many hundred-weight, and a chain cable of many tons, got loose in one of the compartments, and threatened to burst out the ship's side at every roll. Many of the passengers were severely injured. The decks were swept, six boats were carried away, and two were broken to pieces. In this precarious condition the ship lay from Thursday to Sunday evening, a waif upon the ocean. At length, on Sunday afternoon, the violence of the wind abated, the sea went down, and chains were got out and connected with the rudder, so that some, though a very imperfect, purchase was obtained. Some apparatus was constructed and got overboard, by which the ship was steadied and the steering power increased. By these means her head was got round and a course was made for Cork Harbour. On Tuesday she was off the Old Head of Kinsale, and in the afternoon at the entrance of Cork Harbour, but she was unable to enter. She therefore remained outside in great peril, for she was blown out to sea again, and drifted to some distance before she was enabled to enter. Her subsequent history, in connection with the laying of the Atlantic cable, belongs to another section of this work.



THE "MONITOR" PASSING THE VICKSBURG BATTERIES.

CHAPTER IX.

THE HISTORY OF SHIPS AND SHIPPING INTERESTS (*continued*).

The Ironclad Question—One of the Topics of the Day—What is to be their Value in Warfare?—Story of the Dummy Ironclad—Two Real Ironclads vanquished by it—Experience on board an American *Monitor*—Visit of the *Miantonoma* to St. John's—Her Tour round the World—Her Turrets and Interior Arrangements—Firing off the Big Guns—Inside the Turret—"Prepare!"—Effects of the Firing—A Boatswain's-mate's Opinion—The *Monitor* goes round the World safely—Few of the Original American Ironclads left—English Ironclads—The *Warrior*—Various Types—Iron-built—Wood-built—Wood-covered—The Greatest Result yet attained, the *Inflexible*—Circular Ironclads—The "*Garde Côtés*"—Cost of Ironclads—The Torpedo Question—The Marquis of Worcester's Inventions—Bishop Wilkins' Subaqueous Ark—Fulton's Experiments—A Frightened Audience—A Hulk Blown Up—Government Aid to Fulton—The *Argus* and her "*Crinoline*"—Torpedoes successfully foiled—Their use during the American War—Brave Lieut. Cushing—The *Albatross* Destroyed—Modern Torpedoes: the "*Lay*;" the "*Whitehead*"—Probable Manner of using in an Engagement—The Ram and its Power.

EARLY in these chapters, allusion was made to one of the most important of all vital topics connected with shipping interests—the ironclad question—and as it concerns the well-being of the Royal Navy, it concerns that of the nation itself, and no excuse can be needed for its discussion here. Day by day we hear of new types of armoured vessels, single specimens costing the price of a small fleet of former days. That, under certain conditions, they must prove very formidable, there can be no doubt. But, it must be asked, are the bulk of them seaworthy ships? How far is torpedo warfare to interfere with their employment? Are they worth their price to the nation?

Their history so far has been one as much, and indeed far more, of failure than success. "Our submarine fleet" has become a byword, while none of their exploits have excelled those of the *Merrimac* and *Monitor*, two of the very earliest examples constructed. Indeed, the writer knows no more successful results attained than by an improvised "dummy" ironclad during the American war. The ridiculous often merges into or mingles with

the important and the sublime, and the story, little known in England, is inserted here to show how much may sometimes be done in warfare with insignificant means.

The incident occurred in February, 1863. An old coal barge* adrift had been picked up in the James River, and the brilliant idea seized some of Admiral Porter's men to convert her into a "monitor." The whole scheme was carried out in twelve hours. In fact, her construction was hardly more solid than the "paper forts" built of canvas and boards by the Chinese during our war with them, and which collapsed after a shot or two as readily as would the "Rock of Gibraltar" or "Mount Vesuvius" at a firework display. The barge was built up high with boards, while funnels and turrets constructed of pork-barrels reared above, and two old canoes did duty for quarter-boats. A small house, taken from the back yard of a planter's dwelling, stood for the pilot-house. Her furnaces were built of mud or clay; they were only intended to make smoke, not steam. Then a good coat of black paint or pitch; her furnaces were filled with pitch and other inflammable materials, and she was ready. As soon as the "dummy" turned adrift on the Mississippi came in range of the Vicksburg batteries, the alarmed garrison opened fire upon it. The black monitor glided down the stream, belching out fire and smoke, but gave not a shot in return. With amazement the Vicksburg soldiers found that they could not make the slightest impression on the turreted monster. They did not know that it was full of water, and had not a man on board! In ominous and silent disdain she seemed to be making for the Confederate ironclads; one of them, the *Queen of the West*, leaving part of her crew ashore, incontinently fled, with all her steam power, making the best of her way to the Red River. The *Indianola*, a vessel previously captured from the Northerners, was lying aground, and not to be taken by this ruthless monster of a monitor, was ordered to be blown up, which was accordingly done. Thus was this bloodless victory gained by the dummy ironclad. It is not impossible that we may hear of similar tricks in future warfare, as all is fair therein.

The following experiences on board an American monitor are kindly sent to the writer by a friend, formerly in the Royal Navy.

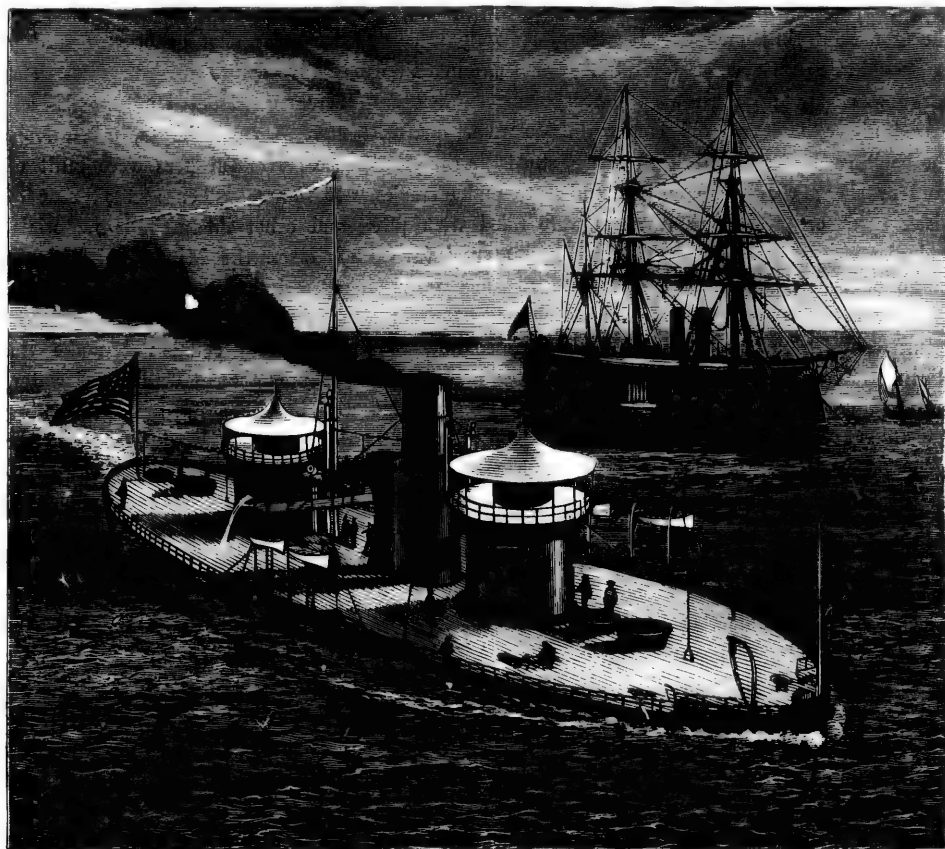
"Great, indeed, was the excitement caused by the deeds of the *Monitor* and *Merrimac* amongst the officers and men of Her Majesty's North Atlantic Squadron. Whether dancing in Halifax, chasing French fishermen on the Newfoundland coast, or 'sunning'† in St. George, there was always to be found some one, from captain to loblolly boy, with a new story of the prowess of these formidable monsters of the shallows! I write 'shallows' advisedly, for if the experience which I am about to narrate proves anything, it will be that as a 'deep water' or sea-going craft the *Monitor* is practically useless.

"Notwithstanding a certain eagerness to behold a specimen of their floating batteries, curiosity was not destined to be gratified until nearly two years after the close of the American War, when the United States Government determined on sending a representative—the *Miantonoma*—to make a tour of the world. The object of this resolution was to prove that the American invention was not a mere floating battery, but was destined to revolutionise the system of armour-plated ships. The *Miantonoma* was accompanied when

* One account says a "ferry-boat," meaning probably one of the large steam ferry-boats common in America.

† "Sunning" means, in some parts of Canada, the act of promenading.

she made her appearance in the harbour of St. John's, Newfoundland, by two tenders, one a second-class corvette, the other a captured blockade-runner, which had been mounted with a single 'Parrot' pivot gun, throwing a spherical shot of 180 lbs. This projectile was dubbed 'the Devil' by those on board, who were by no means anxious to hear its voice, for the lightly-built blockade-runner trembled in every knee at each discharge. Never-



THE "MIANTONOMA."

theless, such a vessel properly built is destined to play an important part in the navy of the future, when our present unwieldy ironclads shall have been relegated to that bourne where torpedoes cannot terrify.

"The *Miantonomah* was a twin-turreted monitor, carrying two of Parrot's 480 pounder smooth-bore. Her spar-deck, which was flush fore and aft, was about two and a half to three feet above the surface of the water in harbour. What we would call the gun-deck was below the water-line some eight feet, and here at sea during any sort of rough weather, the men were compelled to live. Air was supplied (faugh! what an

atmosphere it was, even in harbour!) by means of pipes which ran up to a scaffolding—I can find no better name for the structure—elevated above the spar-deck fifteen feet. Here were the wheel-house and a place for the look-out. But as it was apprehended that the first respectable gale would take charge of the flimsy structure and sweep it all away, a 'preventer' steering apparatus worked below, and knowledge was gained of what was going on in the upper world by means of reflectors. Two things struck the eye of an observant stranger on gaining the side. The first was the formidable appearance of the



INTERIOR OF A TURRET SHIP.

turrets—the latter, *mirabile dictu*, the number of spittoons! At once it became evident that such a craft as that which, if you please, we are now aboard of, could never be taken by boarding. Given the flush deck filled with an armed host; one of these terrible turrets would slowly turn round, the shield protecting the embrasure would fly back, a gaping volcano would belch forth, a whirlwind of flame and smoke only—no need, indeed, would there be for iron orbs at such quarters—and, ere its shield had once more covered grinning death, the armed host would have been swept away.

"It is Her Majesty's birthday, and the *Miantonoma* steams away with those who have been invited on board to witness the firing of the big guns. The salute cannot be fired in the little harbour; else surely every pane of glass from the block-house to Riverhead

will pay the penalty. So Freshwater Bay is to have the honour of hearing man's thunder reverberating along its hill-girded shores.

"Bang, bang—pop, pop, bang. You hear the Armstrongs and old field-pieces go off from Her Majesty's men-of-war in harbour, and Her Majesty's Fort William and water batteries. Then you descend to utter silence. You ascend again through a trapdoor, and find yourself in a circular room, some twelve feet in diameter, padded from top to bottom like the interior of a carriage. By your side is a huge mass of iron. You are inside the turret. A glimmering lamp sheds its feeble light on the moving forms around you, and from below comes the faint whispering of the men, until the trap is shut and you are again in utter silence.

"*'Prepare !'* The gunner's mates stand you on your toes, and tell you to lean forward and thrust your tongue out of your mouth. You hear the creaking of machinery. It is a moment of intense suspense. Gradually a glimmer of light—an inch—a flood. The shield passes from the opening—the gun runs out. A flash, a roar—a mad reeling of the senses, and crimson clouds flitting before your eyes—a horrible pain in your ears, a sense of oppression on your chest, and the knowledge that you are not on your feet—a whispering of voices blending with the concert in your ears—a darkness before your eyes—and you find yourself plump up in a heap against the padding, whither you have been thrown by the violence of the concussion. Before you have recovered sufficiently to note the effects I have endeavoured to describe, the shield is again in its place and the gun ready for re-loading. They tell you that the best part of the sound has escaped through the port-hole, otherwise there would be no standing it, and our gunner's mate whispers in your ear: 'It's all werry well, but they busts out bleeding from the chest and ears after the fourth discharge, and has to be taken below.' You have had enough of it too, and are glad that they don't ask you to witness another shot fired.

"Since the *Miantonoma's* time vast improvements have been made in the matter of turret firing. The guns are now discharged by means of an electric spark, which obviates the necessity for having anyone in the turret, and is certainly a great blessing.

"'And what do you think of her?' I asked a boatswain's-mate. 'Think of her, sir!' he replied. 'I think, sir, that she's a floating coffin, and I would as soon live in —. Every time we're out of harbour she goes under water, and don't come up till we get in again, as the saying is. We are just cooped up here waiting for a big wave to come and swallow us, for she don't rise to the waves, she goes through 'em.' Then, becoming more confidential, 'Tower of the world be hanged, sir! None of us believe we'll ever see Queenstown, and if we only had a chance to get ashore, there ain't a man but what would desert, I guess.'

"I must draw the reader's attention to the fact that I give this sailor's statement for what it is worth. The officers, one and all, as far as my memory serves me, stated that she was a very good sea boat; better, indeed, than they expected, though somewhat sluggish in the water. I may add that the *Miantonoma* not only reached Queenstown, but *did* succeed in making a tour of the world. Yet it was alleged that her crew, with the exception of some twenty men, were put into the tenders, and that she was towed across the 'herring pond' and round the Horn by them. From these facts and rumours the

reader may form his own opinion as to the seaworthiness of the American monitor. My belief is, that for a sea-fight, especially should one occur in a gale of wind, they are practically as useless as a hay-barge, while for harbour defences they have proved themselves invaluable. Of all the splendid fleet of monitors possessed by America at the close of the Federal and Confederate war, there are scarce any left to keep up the reputation of the United States as a naval power. They were contract built, of green oak. The Philadelphia and San Francisco navy yards afford ample proof that a decade has sufficed to destroy what shot and shell found almost invulnerable. Such splendid specimens of naval architecture as the *Brooklyn* and *Ohio* alone are left to keep up the appearance of America's naval strength on foreign stations. But let us hope that her 'shoddy' monitors, like her shoddy blankets or wooden nutmegs, have passed away with her convalescence from intestine wounds, and that the next decade may witness the Stars and Stripes floating powerfully and peacefully side by side with the Union Jack, omnipotent for good."

Any such expression of feeling in regard to the safety of English ironclads, in spite of the terrible loss of the *Captain*, and that of the *Vanguard* (only less serious inasmuch as no lives were sacrificed), would not be echoed by any British sailor on board them. The accommodations, barring the general darkness and sense of gloom inside, only partially illumined by the fitful light of lamps, are generally good, and it is by no means certain that when the electric light has attained that perfection at which its promoters are aiming, there can be any complaint on that score at all. Still, until some grand success has been attained by ironclads, it is very questionable whether they can be thoroughly popular, except to courageous, scientific, and ambitious officers, of whom the service, the writer is certain, does not stand in need. We have had a "Man of iron" ashore, and we shall have him afloat when the occasion requires.

The first types of ironclads introduced into the Royal Navy, as for example, the *Warrior* and *Black Prince*, were nearly identical in general appearance to the war-ships of the day. Now all British ironclads are built with sides approaching the upright or vertical above water. At first they only attempted broadside fire; now bow and stern guns are common. The *Warrior*, as the earliest example of an ironclad in the Royal Navy, deserves special mention. She is doing duty to-day, and is by no means an effete example, but an excellent and useful vessel. She is armoured at the middle only, in the most exposed parts. In other words, her engines and leading guns are protected, while the rest of her hull, though strong, is not armour-covered. Now, whatever weight of armour this central, or "box-battery," as it has been termed, may have, there is always a continuous belt of iron extending from stem to stern, and protecting the region of the water-line and steering gear, the counter of the ship being carried below the water in order to screen the rudder-head. This improvement is due to Sir Spencer Robinson. The *Warrior's* armour was uniform in thickness; now it is strongest in the vital parts. The *Warrior* had only a main-deck battery armour plated; recent ships have had a protected upper-deck battery given them. The *Warrior* carried a large number of guns in an outspread battery; all later ships, of whatever type, have had a *concentrated* battery of much heavier guns. This early armoured ship is long; nearly all later examples are much shorter in proportion to their breadth.

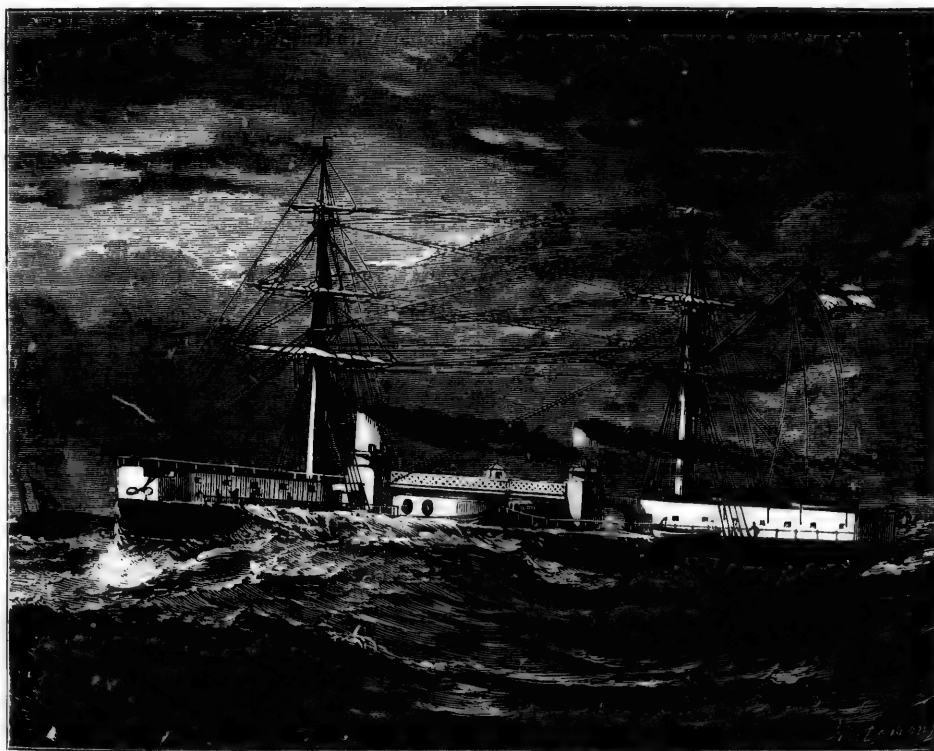
And now to the armour itself, which is sometimes affixed to an iron and sometimes to a wooden hull, and in a few cases has wood *outside* it. These facts, by no means generally known, must be studied, for it can hardly yet be said to be determined which is the better form. It may be said, in general terms, that the "adoption of armour-plating was accompanied in this country by the introduction of iron for the construction of the hulls of ships of war, and our ironclad fleet is for the most part *iron-built*. We have, it is true, a number of wood-built ironclads, but most of these are converted vessels."* Several were built of wood (and then armoured) for the purpose of utilising the large stocks of timber accumulated in the dockyards. In the future it is probable that nearly all will be of iron, with wood backing. The armour of the *Warrior* is only $4\frac{1}{2}$ inches thick, with, however, a "backing" of 18 inches of timber. This type includes the *Black Prince*, *Achilles*, *Defence*, *Hector*, *Valiant*, and *Prince Albert*. Then we come to another series, of which the *Bellerophon*, *Penelope*, *Invincible*, *Audacious*, *Swiftsure*, *Triumph*, *Iron Duke*, and unfortunate *Vanguard* furnish examples. They average 6 inches of iron-plating to 10 inches of wood backing. The lost *Captain* was somewhat heavier in both plating and backing. Then again we advance to a still heavier type—12 inches of iron to 18 inches of wood: the *Glutton*, *Thunderer*, and *Devastation* furnish examples. Then there is the *wood-built* class, the thickness of their (wooden) sides ranging from $19\frac{1}{2}$ to as high as 36 inches, with $4\frac{1}{2}$ to 6 inches of armour. The *Royal Sovereign* (a turret ship) is a leading example of this class; she has $5\frac{1}{2}$ inches of armour, covering 36 inches of wood.

To speak of all the types of armour-clad ships would most undoubtedly weary the reader. Let us examine a leading example. The *Inflexible* (double turret ship) is probably the greatest result yet attained. She is an ironclad of 11,400 tons, with 8,000 horse-power, her estimated first cost being considerably over half a million sterling. She is 320 feet long, and has armour of 16 to 24 inches thick, with a backing of 17 to 25 inches of wood. She has no less than 135 compartments, while her engines are so completely isolated that if one breaks down the other would be working. "But already, as if to show the impossibility of attaining the stage of finality as regards the construction of our men-of-war, there is every reason to believe that she has been excelled. . . . Designed," says our leading journal,† "as an improvement upon the Russian *Peter the Great*, she will herself be surpassed by the two Italian frigates which are building at La Spezia and Castellamare. . . . While the *Inflexible's* turrets are formed of a single thickness of 18-inch armour, and her armament consists of four 81-ton guns, the turrets of the *Dandolo* and the *Dulio* are built of plates 22 inches thick, and are armed with four 100-ton guns." The writer then enlarges on recent gunnery experiments, showing that even the enormous thickness of the *Inflexible's* iron sides have been pierced, and concludes by saying that, "so far as the exigencies of the navy are concerned, the limit of weight seems to have already been reached, for the simple reason that the buoyancy of our ironclads cannot with safety be further diminished by the burden of heavier armour and armaments." The

* The larger part of the above information is derived from "Our Ironclad Ships," by E. J. Reed, late Chief Constructor of the Navy.

† The *Times*, April 26th, 1876.

leading feature in this vessel is the situation of the turrets. In most turret ships afloat these batteries are placed on the middle line, and in consequence only one-half the guns can be brought to bear on an enemy either right ahead or directly astern. In the *Inflexible* the turrets rise up on either side of the ship *en échelon* within the citadel walls, the fore turret being on the port side and the after turret on the starboard side. By these means the whole of the four guns can be discharged *simultaneously* at a ship right



THE "INFLEXIBLE."

ahead or right astern, or, in pairs, towards any point. What vessel could withstand such a fire rightly directed?

As we have seen, the forms and proportions of ironclads have undergone enormous changes from the days when the success of the plated floating batteries at Kinburn called the special attention of Europe to the possibility of successfully protecting vessels in the same way. The shot of the enemy had no effect on these batteries. A special correspondent of the *Times* said: "The balls hopped back off their sides without leaving an impression, save such as a pistol-ball makes on the target of a shooting gallery. The shot could be heard distinctly striking the sides of the battery with a 'sharp smack,' and then

could be seen flying back, splashing the water at various angles according to the direction in which they came, till they dropped exhausted."

One of the greatest novelties is the *circular* ironclad, proposed long ago by Mr. John Elder, in a paper read before the United Service Institution, and carried out by Admiral Popoff, of the Russian navy, who designed one which was afterwards constructed and was christened the *Novgorod*. She was 100 feet in diameter, with curved deck, the highest point of which was only five or six feet above the water. She carried two 28-ton guns. Its model might be described as a floating saucer with a comparatively flat covering. It is even asserted that a good speed is attainable with such vessels, and that they are steerable, if hydraulic machinery is employed. Mr. Elder's plan was as follows:—When a revolving pilot-house on the vessel turned, a jet of water was ejected in a backward line to the very course proposed to steer. The pilot or steersman—having a complete control of the movements of the pilot-house, and a clear look out a-head—only arranged to steer in a particular direction, and the water jet propelled the vessel to its destination. Such vessels are fit for nothing better than river or harbour protection.

The *Alexandra*, whose batteries we show on the opposite page, is one of the most efficient of our English armour-plated ships. She was built at Chatham, and launched in 1875. She was specially built for speed, and carries the maximum weight of armour consistent with sea-going qualities. She is armed with three guns of twenty-five tons each and nine of eighteen tons.

A new form of ironclad, destined for coast duty, has also been introduced in Holland and France. These Governments consider that for the defence of a coast-line, fixed land batteries are not sufficient. They have, therefore, adopted a ponderous form of turreted ironclad, which the French term *garde-côtes*. They are not supposed to be adapted for long sea voyages, as they are veritable floating iron castles, carrying not merely heavy guns, but whole batteries of smaller guns. They have good engine power, and can, therefore, be moved to any part of the coast with ease.

The cost of ironclads to this country has been very serious. Mr. Reed puts it down at a million sterling a year since their inauguration.* For the eighteen years preceding 1876, they cost £16,738,935, and with the cost of wear and tear, repair, and maintenance, not less than £18,000,000. £300,000 was required for repairs and maintenance alone in one year, perhaps an exceptional case. The *Warrior*, built in the year 1860, cost, to 1876, for maintenance and repair, no less than £124,245, or about a third of her original cost. She is the earliest type of ironclad, and of small tonnage compared with several of her successors. What *they* may cost to maintain is a still more serious problem. Single ironclads have cost the country half a million sterling; the *Inflexible*, £600,000.

Connected intimately with the ironclad question is the torpedo movement. From an early date schemes have been devised for injuring an enemy's vessel by submarine apparatus and otherwise than by guns. In the seventeenth century, we find the celebrated Marquis of Worcester describing such apparatus. The ninth of his "Century of Inventions" describes a small engine, portable in one's pocket, which might be carried and fastened on the inside of the ship, and at any appointed time, days or weeks after, at the will of the operator, it should explode and sink that vessel.

* *Vide* "Our Ironclad Ships."

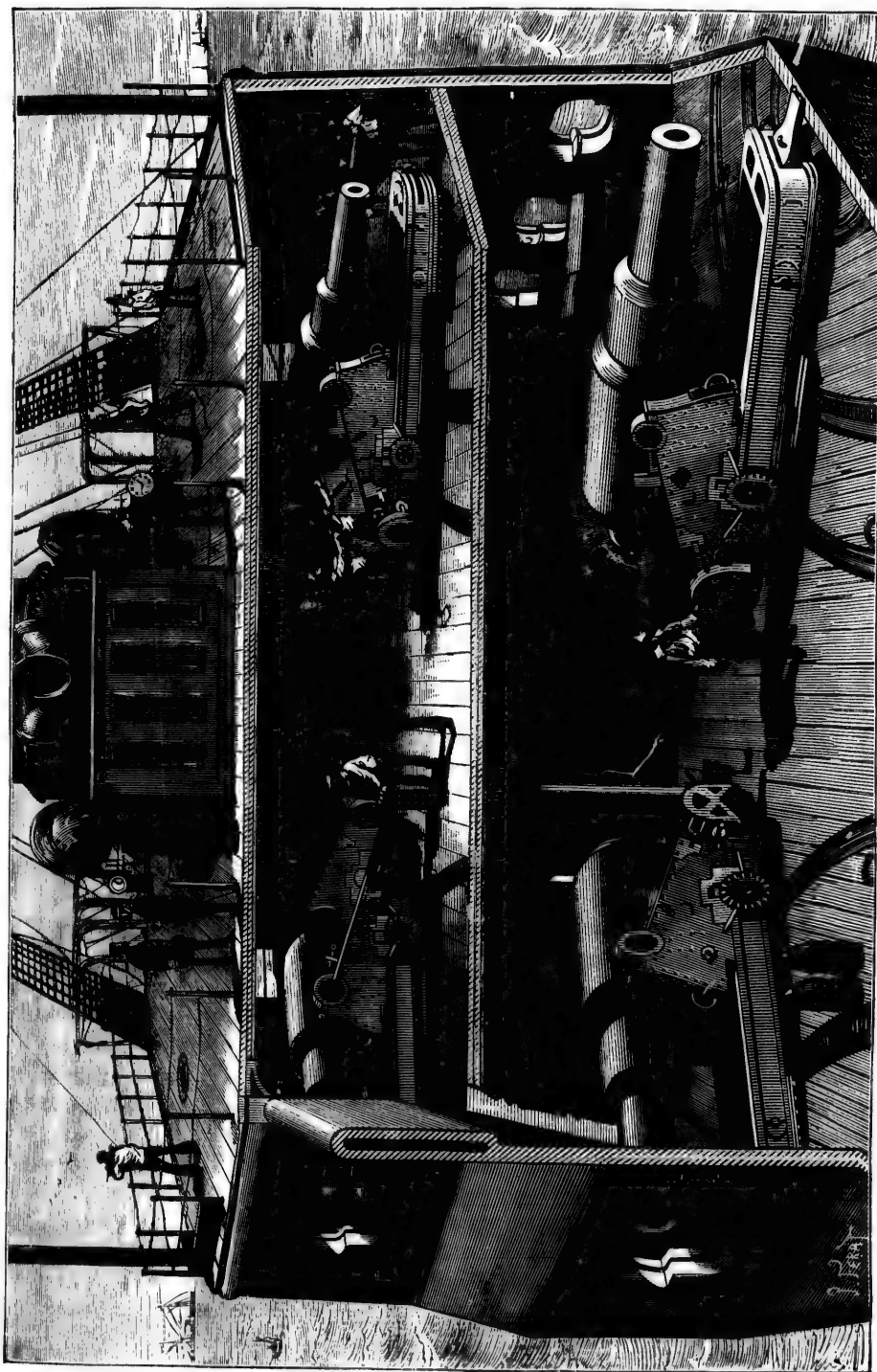
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SECTION OF THE "ALEXANDRA."

In his tenth invention, the Marquis of Worcester describes "a way from a mile off to dive and fasten a like engine to any ship, so as it may punctually work the same effect, either for time or execution." The details of construction and working are left to the reader's imagination.

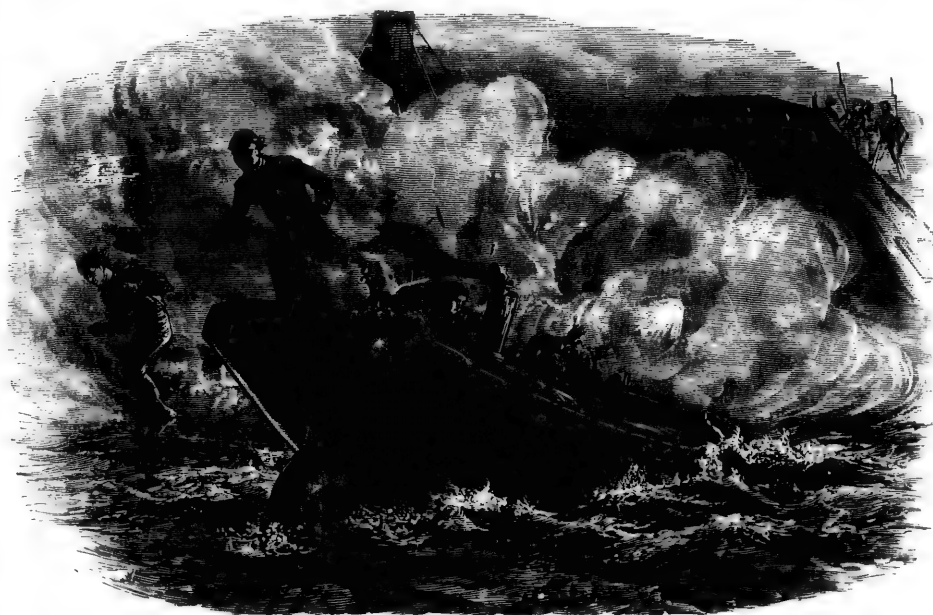
Bishop Wilkins, in a curious work on "Mathematical Magick," published in 1648, describes a possible submarine vessel, or "ark," as he terms it. He says that it "may be effected beyond all question, because one Cornelius Dreble hath already experimented on it here in England." Of Dreble very little is known; but it is on record that he constructed a subaqueous boat, which he exhibited before James I., which carried twelve rowers and some passengers, and further, that that monarch was so pleased with it that he sent a duplicate as a present to the grand Duke of Muscovy (Russia). The bishop discusses the matter very fully. The boat is, of course, to be watertight, all openings being sealed for the nonce by leather bags, with two sets of fastenings. The oars were to project also through leather bags, giving freedom of motion and yet excluding the water. A serious difficulty—the lack of fresh air on board—is partially slurred over; but he considers that the sailors, "by long use and custome," will practically get used to it. The raising or lowering of the vessel is to be accomplished by the lifting or depression of an enormous stone hung to its keel. He considered that the steering would be easier than on the surface, there being no contrary winds or atmospheric disturbances to interfere. The vessel is to be well manned by artisans, and children are to be born in the "ark:" one of the points specially mentioned being their inevitable astonishment when they for the first time behold the light of day at the surface, and are landed on *terra firma*! The log is not merely to be written but is to be printed on board. "Among the many conveniences of such a contrivance, it may be of very great advantage against a navy of enemies, who, by this means, may be undermined in the water and blown up."

Another old writer, Schott, in a rare and curious work, entitled "Mirabilia Mechanica," offers several schemes for submarine vessels, and gives a drawing of one with a paddle-wheel as the propelling power. The wheel, worked by men, was to work in a watertight box in the centre of the vessel, the paddles projecting below the keel. A Frenchman built a vessel of this description at Rotterdam in 1653, and publicly exhibited it. Pepys, in his "Diary," writes, on the 14th of March, 1662: "This afternoon came the German Dr. Knuffler, to discourse with us about his engine to blow up ships. We doubted not the matter of fact—it being tried in Cromwell's time—but the safety of carrying them in ships; but he do tell us that when he comes to tell the King his secret (for none but kings successively, and their heirs, must know it) it will appear of no danger at all." We have before described Fulton's submarine boat, the *Nautilus*, and his torpedo experiments in France and England; let us now follow him to the New World.

Fulton arrived in America in December, 1806, and so far from being discouraged by the apathy displayed towards his inventions in Europe, inaugurated fresh experiments, under Government sanction, a certain expenditure being authorised. An amusing account of one of his semi-public exhibitions is given by his biographer:*—"In the meantime, anxious to prepossess his countrymen with a good opinion of his project, he invited the

* C. D. Colden: "Life of Robert Fulton."

magistracy of New York and a number of citizens to Governor's Island, where were the torpedoes and the machinery with which his experiments were to be made; these, with the manner in which they were to be used and were expected to operate, he explained very fully. While he was lecturing on his blank torpedoes, which were large empty copper cylinders, his numerous auditors crowded round him. At length he turned to a copper case of the same description, which was placed under the gateway of the fort, and to which was attached a clockwork lock. This, by drawing out a peg, he set in motion, and then said to his



LIEUT. CUSHING'S ATTACK ON THE "ALBEMARLE."

attentive audience, 'Gentlemen, this is a charged torpedo, with which, precisely in its present state, I mean to blow up a vessel; it contains one hundred and seventy pounds of gunpowder, and if I were to suffer the clockwork to run fifteen minutes, I have no doubt but that it would blow this fortification to atoms!' The circle round Mr. Fulton was very soon much enlarged, and before five of the fifteen minutes were out there were but two or three persons remaining under the gateway; some, indeed, lost no time in getting at the greatest possible distance from the torpedo with their best speed, and did not again appear on the ground till they were assured it was lodged in the magazine." Fulton, of course, displayed the utmost coolness, knowing that his torpedo could not explode till the clockwork had run its allotted time, and of course taking care that it should be stopped long before the expiration of the fifteen minutes.

On the 20th of July, 1807, he attempted to blow up with torpedoes, in the harbour of New York, a large hulk, brig which had been provided for the purpose. Several unsuccessful

attempts were made at first, owing to some derangements connected with the locks of the exploding apparatus. At length, however, the explosion took place, and was a thorough success. He has left a full account of it in his own work.* Nothing was left of the brig; all that was seen in her place was a high column of water, smoke, and fragments. It showed, as Fulton always believed, that the torpedo should, if possible, be exploded *under* the vessel to be blown up. In his cool but yet enthusiastic way he says: "Should a ship of the line containing five hundred men contend with ten good row-boats, each with a torpedo and ten men, she would risk total annihilation, while the boats, under the cover of the night and quick movements, would risk only a few men out of one hundred."

Fulton, after this, lectured frequently before the members of Congress, and so favourably impressed them that a sum of 5,000 dollars was voted in aid of his experiments. One of the plans he proposed was to couple by a line two torpedoes, then letting them drift on the bow of the vessel to be destroyed, the line would catch on the cable or bows, and the torpedoes would drift towards the vessel on either side. He also proposed "block ships" of 50 or 100 tons, with cannon-proof sides and musket-proof decks (*i.e.*, virtually ironclads), to be propelled by machinery, *which was to be worked by the crew*. "On each quarter and bow she was to be armed with a torpedo fastened to a long spar, the interior end of which was to be supported and braced by ropes from the yards. . . . By means of these spars the torpedoes were to be thrust under the bottom of the vessel to be destroyed." Half the many plans proposed for torpedo warfare may be traced back to Robert Fulton at the end of the last and beginning of the present century. Among his inventions was a "cable-cutting machine," a description of which would occupy an undue amount of space in a popular work. Suffice it to say that by its means he succeeded in cutting, several feet below the surface of the water, the cable—a 14-inch one—of a vessel lying at anchor.

One of the most important experiments made at this time was his attempt, under sanction of Government, to blow up the sloop-of-war *Argus*, and the case demonstrates very clearly the ingenuity of the *defence*, and the means taken to foil the assailing torpedo. We have heard quite recently of propositions to defend a vessel by means of a kind of "crinoline," as it has been termed, a strong network, &c., surrounding the whole or a part of the vessel at some distance from it, which should prevent the torpedo from exploding near the hull. Such was actually the means devised by Commodore Rodgers, of the United States Navy, in the year 1809, and which proved entirely successful in foiling Fulton's torpedo. Colden says:—"She had a strong netting suspended from her spritsail-yard, which was anchored at the bottom; she was surrounded by spars lashed together, which floated on the surface of the water, so as to place her completely in a pen; she had grappling-irons and heavy pieces of the same metal suspended from her yards and rigging, ready to be plunged in any boat that came beneath them; she had great swords, or scythes, fastened to the ends of long spars, moving like sweeps, which unquestionably would have mowed off as many heads as came within their reach."

By these devices the torpedo-boat was unable to get near the *Argus*, while the netting,

* "Torpedo War, and Submarine Explosions" (New York, 1810). A scarce and valuable brochure.

anchored to the bottom of the harbour, prevented any probability of the torpedo being fired under the vessel. The Government had practically said to Fulton, "Do your best, and we'll do our best to defeat you." The experiment was not one-sided, as are so many. Fulton, far from complaining, thus wrote: "I will do justice to the talents of Commodore Rodgers. The nets, booms, kentledge, and grapnels which he arranged around the *Argus* made a formidable appearance against one torpedo-boat and eight bad oarsmen. I was taken unawares. I had explained to the officers of the navy my means of attack; they did not inform me of their means of defence. The nets were put down to the ground, otherwise I should have sent the torpedoes under them. In this situation, the means with which I was provided being imperfect, insignificant, and inadequate to the effect to be produced, I might be compared to what the inventor of gunpowder would have appeared had he lived in the time of Julius Cæsar, and presented himself before the gates of Rome with a four-pounder, and had endeavoured to convince the Roman people that by means of such machines he could batter down their walls. They would have told him that a few catapults casting arrows and stones upon his men would cause them to retreat; that a shower of rain would destroy his ill-guarded powder; and the Roman centurions, who would have been unable to conceive the various modes in which gunpowder has since been used to destroy the then art of war, would very naturally conclude that it was a useless invention; while the manufacturers of catapults, bows, arrows, and shields would be the most vehement against further experiments."

Torpedoes were used extensively during the civil war in America, but almost entirely for rivers or harbour defence. One of the most prominent examples was the following:—The ironclad ram *Albemarle** had been carrying all before it, till Lieutenant Cushing, a brave young officer, scarcely twenty-one years of age, took a steam-launch, equipped as a torpedo-boat, on the night of October, 1864, up the Roanoke River. He had with him thirteen men. The launch was steered directly for the ironclad, which lay at one of the wharfs of Plymouth, protected by a raft of logs extending thirty feet. The enemy's fire was at once very severe, but the torpedo-boat went bravely on, and succeeded in pressing in the logs a few feet. Cushing, in his despatch, says—"The torpedo was exploded at the same time that the *Albemarle's* gun was fired. A shot seemed to go crashing through my boat, and a dense mass of water rushed in from the torpedo, filling and completely disabling her. The enemy then continued to fire at fifteen feet range, and demanded our surrender, which I twice refused." Cushing leaped into the water and, with one of his party, made good his escape. The rest of the little crew were either captured, killed, or wounded. The object of the attack was, however, successful, and the *Albemarle* was found to be a complete wreck. Torpedoes were also employed with great effect by the Paraguayans in their war against the Brazilians in 1866.

Great are the varieties of torpedoes invented at various times in late years, and a technical description of them, which would be wearying to the reader, would fill a large volume. An ingenious kind, known as the "Lay" torpedo, after the name of its inventor,

* Such a vessel as the *Albemarle* would be scorned in England and America now-a-days, if regarded as an ironclad. But she was, of course, infinitely stronger than the wooden ships with which she had to fight.

comes from the New World. It is of cylindrical form, with conical ends, the forward cone calculated to hold a hundred pounds of some explosive substance—dynamite,* probably, being used. A forward section of the main cylinder holds a powerful gas, condensed into *liquid* form, and used as the motive power, and connected with the machinery by a valve operated by electricity. The torpedo has a cable coiled as harpoon-ropes are arranged in whaling-vessels, which may be of any length, the wires connected with the battery following its course. This instrument of destruction is entirely under the control of the operator, who may be stationed with his small portable battery on the shore or on a vessel. It is said that they have been sent out half a mile and brought back to the starting-point at a rate of twelve miles an hour, and that the rapidity and precision with which the machine obeyed the operator demonstrated them to be among the most formidable weapons ever invented for naval warfare.

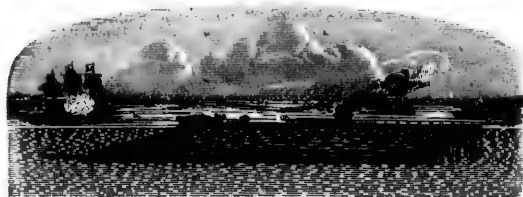
These subaqueous weapons have never been used in an engagement between fleets. In an interesting essay† on the subject by Commander Noel, R.N., he recommends or proposes that four torpedo vessels should accompany a fleet, and describes their probable operations as follows:—

"Let us imagine ourselves, then, on board a rakish little craft, fitted for Harvey torpedo work; we can steam sixteen knots; we tow a torpedo on each quarter; and we are so admirably fitted with steel-protecting mantelets that neither officer nor man is exposed either to view or to rifle fire. Our instructions are that on the approach of a hostile force we and our three consorts are to hold ourselves in readiness to charge the enemy's line, passing through at full speed, and doing all the damage that lies in our power: these orders to be carried into effect in obedience to a preconcerted signal. The enemy is observed approaching, and apparently moving at about ten knots' speed. The torpedo vessels are let loose, and, choosing the centre of the enemy's fleet, rush on, steering for a flag-ship leading a column in line ahead. Heavy guns are fired at us as we near, but we are so small and rapid in our movements that no shot takes effect; we are reducing our distance at the rate of a mile in two and a half minutes; soon comes the time of suspense; in a second or two we are passing the flag-ship; the port torpedo is dipped—will it strike her? Suddenly a tug on the wire towing-rope, and it parts. Her bow has been protected, and our torpedo is torn away harmless. However, another mine tows on the opposite quarter, still in working order; we are in the midst of the enemy's fleet, rushing past one after another at half-minute intervals; our only chance of using our other torpedo is in breaking through the line; our commander is eminent for his skill, courage, and confidence. Little choice is given us, but he

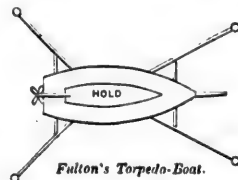
* The explosive power of dynamite, or "giant powder," as it is known in America, is something wonderful. The writer while in California witnessed some experiments with it, which are indelibly written on his brain. A mortar was set upright in the field appropriated for the exhibition, and several pounds of ordinary powder having been rammed down, a large cannon-ball was put in and the charge fired. The ball was raised a foot or so, and then tumbled to the ground. A few ounces of dynamite and the same ball were placed in the mortar, and the charge exploded by concussion. The cannon-ball was projected upwards in the air several hundred feet. It will be imagined that the writer and his friends scattered in all directions, and watched very carefully the downward flight of the ball.

† "The Gun, Ram, and Torpedo." (Prize Essay written for the Junior Naval Professional Association, 1874.) By Commander Gerard H. U. Noel, R.N.

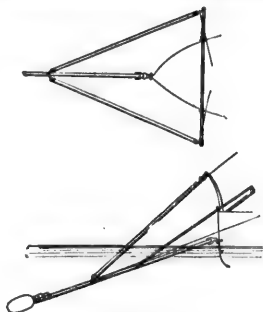
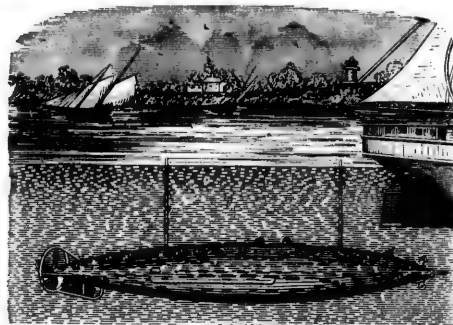
observes a rather great interval astern of the fourth ship. 'Starboard' is the order, and we break through under her stern; our starboard torpedo is at the same time dipped, and passes under the fifth ship. Owing to a combination of luck and good management, the torpedo takes effect and the enemy is blown up. The other torpedo vessels have thrown the enemy into considerable disorder, but none have succeeded in using their torpedoes with effect. One of them has been struck by a heavy shell and totally disabled, but the whole fleet has passed on without finding it possible to capture or sink her without losing their position in station and being left behind; the thought foremost



Porter Torpedo-Boat.



Fulton's Torpedo-Boat.

Spar Torpedo.
(Front and side views.)

Lay Torpedo.

DIFFERENT FORMS OF TORPEDOES.

in every captain's mind also being that the enemy's fleet is almost in contact with them, and that the moment to act has arrived.

"This is an example of an attack with 'Harvey' torpedoes from ahead and across the bow . . . In my opinion, it would invariably be rendered fruitless if the bows of the ships attacked were protected by an iron framework of the simplest description.

"But let us return to our little craft, in which we have already run the gauntlet of the hostile fleet. Having cleared the enemy with little or no damage, we look back and see our fleet of ironclads breaking through their lines, which have been so shaken by our assault. When through, our fleet re-forms and wheels for the next charge. We must be at work again; our torpedoes are replaced, and everything is in working order. This time we follow our ironclads to the charge. We are, if anything, more hopeful of success. The enemy will not see us till we are at them; our blood is warming to the work, and we feel that we have gained experience and confidence by the first charge. Pressing on, we observe the second charge of the fleet, amidst smoke, confusion, and thundering of cannon.

The enemy is prepared, and it is a case of 'Greek meeting Greek.' Our vessel is put at full speed, and, with our consorts (now reduced to two), we go at the enemy. However, in the charge that is made only one of us succeeds in exploding a torpedo, and that without much damage to the enemy; one of our consorts is run down and sunk, and we pass through, only dipping one torpedo, and that too late to take effect. The enemy are not in the steady line they were in before, and consequently we have not such an opportunity of creating disorder, and have more difficulty in manœuvring to use our weapon.



PARAGUAYAN TORPEDO BLOWING UP A BRAZILIAN IRONCLAD.

Passing on, fortune still favours us. We come across an enemy disabled, stern on to us with her ensign flying. 'At her!' is the order. Another moment and we are close to her, our torpedo in beautiful position, and the enemy helpless. Down comes her ensign, just in time; we are able to let go the torpedo so as to clear her—now a lawful prize.

"So it is that I believe a torpedo vessel will be handled in an action. It will be ticklish work; and all I can say is that the men who undertake it should be gifted with coolness and courage above their fellows, as well as with the utmost proficiency in handling their vessels."

Perhaps the most formidable *ocean-going* torpedo vessel yet constructed is the American despatch-vessel *Alarm*, designed by Admiral David Porter, of the United States Navy. It is 172 feet long, including a ram of twenty-seven feet in length. One of her special qualities is the power of launching torpedoes from almost any point, from cylinders

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pecially constructed for the purpose, that at the bow being thirty-two feet in length. A torpedo-boat, built by the Messrs. Yarrow, of Poplar, for the Russian Government during the late war, appears to have special merits. It is built of light steel, with what is called a "whale-back"—a semi-circular covering, which resists any ordinary shot and throws off any sea whatever. The funnel is not in the centre, but towards the side, in order not to interfere with the steersman's view nor with the torpedo boom. It has a boom which can be lowered in the water, the torpedo being submerged ten feet before it is started off on its deadly errand. And, finally, it can be projected from the stern, which gives it a splendid chance of leaving before the final explosion.



In the late Turko-Russian war torpedoes were often attached to logs of wood or clumps of brushwood, and floated into the stream of the Danube. These often attracted little attention; and when they came into contact with any obstacle the mine exploded by means of percussion, the blow being delivered by a projecting arm or other contrivance driven back upon some detonating substance within. The Harvey torpedo, one of the leading types, consists of a stout wooden casing, strengthened on the outside with iron straps, and containing a metal shell, which holds the powder charge. The largest size of this weapon measures 4 feet 6 inches in length by 2 feet in depth, and 2 feet 6 inches in width, and carries 100 lbs. of dynamite. The torpedo is fired by being brought into hugging contact with an enemy's ship, when one or other of two projecting levers acts upon an exploding bolt causing the ignition of the charge. The exploding apparatus consists of a tube containing a chemical agent and a bulb holding another. The nature of these chemicals is such that when they combine violent combustion ensues, which explodes the charge. These torpedoes are towed at the end of a long hawser, connected to a spar, so arranged that the torpedo itself, instead of following immediately in the wake or trail of the vessel towing it, diverges in the same manner that an otter float does: from which device Captain Harvey took his idea. Attached to the torpedo are two large buoys, for the purpose of supporting it when the vessel is not moving through the water, or when the towing-line is slackened. Another variety is fired by electricity.

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The Whitehead, or "fish" torpedo, is a cigar-shaped steel cylinder 14 to 19 feet in length, and from 14 to 16 inches in diameter. It is sent off, requiring no crew, against the ship to be destroyed; and if one torpedo fails to deal the death-blow it can be followed up by another, or yet a third. It consists of three compartments. The head contains the explosive—say 360 lbs. of gun-cotton; the centre holds the machinery; and the tail the highly-condensed air which works the engine. The engine is about thirty-five pounds weight, and can be worked to forty horse power! The explanation of this is simply that the working pressure of the condensed air is 1,000 lbs. per square inch. The tail holds compressed air sufficient to propel the torpedo 200 yards, at a rate of twenty-five miles an hour, or 1,000 yards at the rate of seventeen miles.

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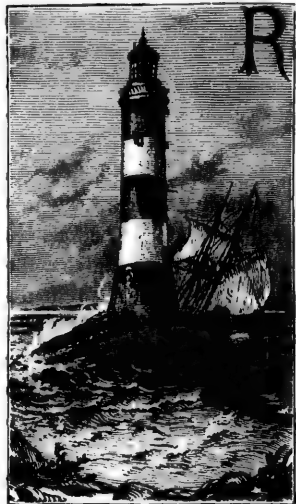
The "battle of the guns" has not yet been fought; but how about the rams? They have been proved the deadliest weapons of destruction in modern times. The lessons of Lissa have been already cited in these pages; so have the lessons taught by the loss of the *Vanguard* and the *Grosser Kurfurst*. In the latter cases it was friends that struck the blow. Some of our greatest authorities consider that nothing can exceed the power of the ram of

a modern ironclad, properly applied. Admiral Touchard, of the French Navy, says: "The 'beak' (*i.e.* 'ram') is now the principal weapon in naval combats—the *ultima ratio* of maritime war." Captain Colomb, a distinguished English authority, says: "Let us just recall the fact that the serious part of a future naval attack does not appear to be the guns, but the rams." Yet again another authority, Captain Pellew, says: "Rams are the arm of naval warfare to which I attach the chief importance. In my opinion, the aim of all manœuvring and preliminary practice with the guns should be to get a fair opportunity for ramming."

CHAPTER X.

THE LIGHTHOUSE AND ITS HISTORY.

The Lighthouse—Our most noted one in Danger—The Eddystone Undermined—The Ancient History of Lighthouses—The Pharos of Alexandria—Roman Light Towers at Boulogne and Dover—Fire-beacons and Pitch-pots—The Tower of Cordouan—The First Eddystone Lighthouse—Winstanley and his Eccentricities—Difficulties of Building his Wooden Structure—Resembles a Pagoda—The Structure Swept Away with its Inventor—Another Silk Mercer in the Field—Rudyard's Lighthouse—Built of Wood—Stood for Fifty Years—Creditable Action of Louis XIV.—Lighthouse Keeper alone with a Corpse—The Horrors of a Month—Rudyard's Tower destroyed by Fire—Smeaton's Early History—Employed to Build the Present Eddystone—Resolves on a Stone Tower—Employment of "Dove-tailing" in Masonry—Difficulties of Landing on the Rock—Peril incurred by the Workmen—The First Season's Work—Smeaton always in the Post of Danger—Watching the Rock from Plymouth Hoe—The Last Season—Vibrations of the Tower in a Storm—Has Stood for 120 Years—Joy of the Mariner when "The Eddystone's in Sight!"—Lights in the English Channel.



ROUND the history of ships and shipping interests innumerable subjects intertwine. But for the good ship, we should not need coast fortifications, grand breakwaters, and artificial harbours, lighthouses, lifeboats, and coast-guard organisations. Just as England stands pre-eminent on the sea, so in all subsidiary points connected therewith she is fully represented. To the lighthouse and its history attention is now invited.

Not long since many an anxious eye was turned Channelwards from Plymouth Hoe towards that group of rocks, on one of which the famous Eddystone Light stood—and happily, still stands—for the light that should have illumined the stormy waters was apparently quenched. Not till morning dawn had nearly come was a re-assuring glimmer noted in the lantern of that famed Pharos of our coasts. And there was good reason for anxiety, although the immediate occasion was a mere temporary derangement of the lighting apparatus: for the report had spread that Smeaton's greatest architectural triumph

had collapsed before the power of the sea. One trembles to think what that might have meant, not merely to its few inhabitants, but to scores of sailors and owners. "Happily," said one of our leading journals, "the Eddystone is still safe, despite the terrible effects

of winds and waves, and the serious weakness of its own foundations, which was discovered a few years ago. For the tower which lights the way of the sailor into Plymouth Sound is, after all, not so secure a structure as could be desired. Built of solid masonry and with immense skill, by the clever architect from Hull who designed and carried out the work, it had yet to trust for its foundation to the rock upon which it stood. Should that give way the stone-work of the edifice might be strong enough, and yet some day fall into hopeless ruin. Strange to say, this very weakness has been self-revealed. The rock upon which the lighthouse stands, and which, of the twenty-three that comprise the group, is most exposed to the action of the sea, has been so violently attacked by what Ovid calls the 'insane waters' as to have become very seriously undermined. Gradually the waves have cut away the foundations of the stone, rising now and then against the lighthouse, and pressing against the structure with such force as to make the building itself serve the turn of a crowbar, and so, little by little, creating fissures in the foundations, and gradually preparing the way to



THE TOWER OF CORDOUAN.

the end." Many attempts have been made to obviate these evils by the removal of rock which it was supposed acted as a lever to the water, and by other means: but in vain. At length the Board of Trinity House finding their efforts futile, determined to erect another lighthouse. Meantime, a light-ship has been provided, which, in case of accident to Smeaton's tower, will be moored in the neighbourhood. A larger building is now in course of erection on an adjacent rock, which affords a more durable foundation and is less exposed to the merciless waves. It will be nearly double the height of the older structure, which was seventy-two feet high, and is being built on a principle of dovetailing, which, it is hoped and believed, will secure it against the worst fury of the sea. Think what that fury is sometimes, gentle reader! At the Skerryvore Rock they have an apparatus for registering the power of the waves per square foot surface; once recently it registered *three tons* to the foot!

The most noted lighthouse in the world was undoubtedly the Pharos of Alexandria, named from the island on which it stood. The French, Italians, and Spaniards to-day use the term almost in its original purity: thus, French for lighthouse, *phare*; Italian and Spanish, *faro*. It was commenced by the first Ptolemy, and finished about 280 B.C., the workmanship, according to all accounts, being superb. This tower of white stone was 400 feet high. It is stated by Josephus that the light, which was always kept burning on its top at night, was visible over forty miles. It is believed to have been destroyed by an earthquake, though the date of its destruction is unknown.

The Romans were the first to erect anything approaching a Pharos, or lighthouse, on our coasts. Beacon fires may have been occasionally used before; the conquerors made the matter an organised affair. On either side the Channel, at Boulogne and Dover, structures of no mean altitude were raised for this purpose. That at Boulogne is supposed to have been erected by Caligula; all vestiges of it have passed away. It was originally called *Turris Ardens*, afterwards corrupted to the *Tour d'Ordre*. From a description left by Claude Châtillon, engineer to Henry IV., it appears that it was built about a stone's throw from the edge of the cliff, above and overlooking the high tower and the castle. Its form was octagonal, with a base 192 feet in circumference. It was built of grey stone with thin red bricks between. That at Dover still exists. It occupies the highest point of the lofty rock on which the famous castle is built. This Pharos was also octagonal in outward form, being square within. It is 33 feet in diameter, and formerly about 72 feet high. On the summit three holes on the three exterior sides indicate their purposes, both for look-out and for exhibiting a light seawards.

Long after, and indeed almost down to our days, fire-beacons were far more common on exposed parts of our coasts than lighthouses. "The first idea of a lighthouse," said Faraday, "is the candle in the cottage window, guiding the husband across the water or the pathless moor." Lambarde says of the lights shown along the coast that, "Before the time of Edward III., they were made of great stacks of wood; but about the eleventh yeere of his raigne it was ordained that in our shyre (Kent) they should be high standards with their pitchpots." Such were long used.

Lighthouses in these days differ greatly in material and mode of construction. Stone, brick, cast and wrought iron, and even wood, are used, according to the necessities of the case, or the lacks of the special locality where they are placed. In the case of some iron

lighthouses they are literally screwed into the rock or hard ground. Seventy of this class of structures now exist in the United States.

One of the most remarkable early lighthouses is the Tower of Cordouan, situated on a ledge of rocks at the mouth of the Garonne, which empties into the Bay of Biscay. It was commenced in 1584, and completed in 1610, by Louis de Foix.

The ledge is about 3,000 feet long and 1,500 feet broad, and is bare at low water. It is surrounded by detached rocks, upon which the sea breaks with terrific violence. There is but one place of access, which is a passage 300 feet wide, where there are no rocks, and which leads to within 600 feet of the tower. The tower was a circular cone, rising from its rocky base to a height of 162 feet. It is now shorter. The apartments of the tower are highly ornamented, consisting of four storeys, all of different orders of architecture, and adorned with busts and statues of Kings of France and heathen gods. The basement, or lower storey, appears to have been intended as a store-room; the second storey is called the "King's apartments;" the third is a chapel; and the fourth consists of a dome supported by columns, a kind of lower lantern; above this was originally a lantern formed of a stone dome and eight columns. In the upper lantern a fire of oak wood was kept burning for about a hundred years, when, in 1717, the fire having weakened the stone supports by calcining them, the upper lantern was taken down, and the light was kept up in the lower lantern. As it did not show well there, an iron lantern was erected in 1727 above this, in the place of the old stone lantern, and coal was then used for fuel instead of wood.

The following history of the Eddystone is largely derived from one of Mr. Samuel Smiles' graphic and learned works.*

In 1696, Mr. Henry Winstanley (a mercer and country gentleman), of Littlebury, in the county of Essex, obtained the necessary powers to erect a lighthouse on the Eddystone. That gentleman seems to have possessed a curious mechanical genius, which first displayed itself in devising sundry practical jokes for the entertainment of his guests. Smeaton tells us that in one room there lay an old slipper, which, if a kick was given it, immediately raised a ghost from the floor; in another the visitor sat down upon a chair, which suddenly threw out two arms and held him a fast prisoner; whilst, in the garden, if he sought the shelter of an arbour, and sat down upon a particular seat, he was straightway set afloat in the middle of the adjoining canal. These tricks must have rendered the house at Littlebury a somewhat exciting residence for the uninitiated guest. The amateur inventor exercised the same genius, to a certain extent, for the entertainment of the inhabitants of the metropolis, and at Hyde Park Corner he erected a variety of *jets d'eau*, known by the name of Winstanley's Waterworks, which he exhibited at stated times at a shilling a head.

This whimsicality of the man in some measure accounts for the oddity of the wooden building erected by him on the Eddystone Rock; and it is matter of surprise that it should have stood the severe weather of the English Channel for several seasons. The building was begun in the year 1696, and finished in four years. It must necessarily have been a work attended with great difficulty as well as danger, as operations could

* "The Life of Smeaton," as incorporated in his "Lives of the Engineers."

only be carried on during fine weather, when the sea was comparatively smooth. The first summer was wholly spent in making twelve holes in the rock, and fastening twelve irons in them, by which to hold fast the superstructure. "Even in summer," Winstanley says, "the weather would at times prove so bad that for ten or fourteen days together the sea would be so raging about these rocks, caused by out-winds and the running of the ground seas coming from the main ocean, that although the weather should seem and be most calm in other places, yet here it would mount and fly more than two hundred feet, as has been so found since there was lodgment on the place, and therefore all our works were constantly buried at those times, and exposed to the mercy of the seas."

The second summer was spent in making a solid pillar, twelve feet high and fourteen feet in diameter, on which to build the lighthouse. In the third year all the upper work was erected to the vane, which was eighty feet above the foundation. In the midsummer of that year Winstanley ventured to take up his lodging with the workmen in the lighthouse; but a storm arose, and eleven days passed before any boats could come near them. During that period the sea washed in upon Winstanley and his companions, wetting all their clothing and provisions, and carrying off many of their materials. By the time the boats could land, the party were reduced almost to their last crust; but, happily, the building stood, apparently firm. Finally, the light was exhibited on the summit of the building, on the 14th of November, 1698.

The fourth year was occupied in strengthening the building round the foundations, making all solid nearly to a height of twenty feet, and also in raising the upper part of the lighthouse forty feet, to keep it well out of the wash of the sea. This timber erection, when finished, somewhat resembled a Chinese pagoda, with open galleries and numerous fantastic projections. The main gallery, under the light, was so wide and open that an old gentleman who remembered both Winstanley and his lighthouse, afterwards told Smeaton that it was possible for a six-oared boat to be lifted up on a wave and driven clear through the open gallery into the sea on the other side. In the perspective print of the lighthouse, published by the architect after its erection, he complacently represented himself as fishing out of the kitchen window!

When Winstanley had brought his work to completion, he is said to have expressed himself so satisfied as to its strength that he only wished he might be there in the fiercest storm that ever blew. In this wish he was not disappointed, though the result was the reverse entirely of the builder's anticipations. In November, 1703, Winstanley went off to the lighthouse to superintend some repairs which had become necessary, and he was still in the place with the light-keepers, when, on the night of the 26th, a storm of unparalleled fury burst along the coast. As day broke on the morning of the 27th, people on shore anxiously looked in the direction of the rock to see if Winstanley's structure had withstood the fury of the gale, but not a vestige of it remained. The lighthouse and its builder had been swept completely away.

The building had, in fact, been deficient in every element of stability, and its form was such as to render it peculiarly liable to damage from the violence both of wind and water. "Nevertheless," as Smeaton generously observes, "it was no small degree of heroic merit in Winstanley to undertake a piece of work which had before

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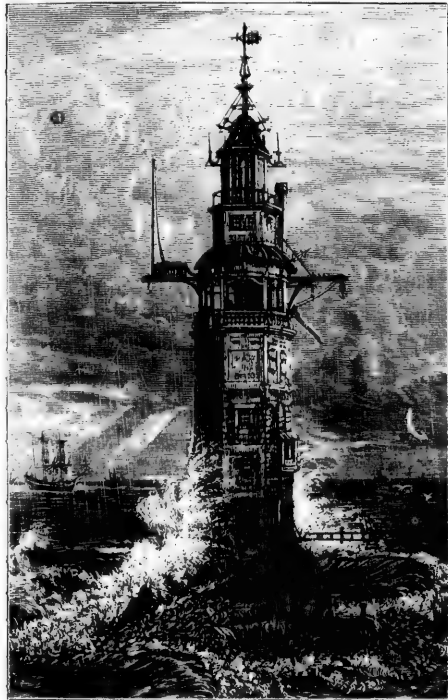
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DESTRUCTION OF RUDYERD'S LIGHTHOUSE.

been deemed impracticable, and, by the success which attended his endeavours, to show mankind that the erection of such a work was not in itself a thing of that kind." He may, indeed, be said to have paved the way for the more successful enterprise of Smeaton himself; and its failure was not without its influence in inducing that great mechanic to exercise the care which he did, in devising a structure that should withstand the most violent sea on the south coast. Shortly after Winstanley's lighthouse had been swept away, the *Winchelsea*, a richly laden homeward-bound Virginian, was wrecked on



WINSTANLEY'S LIGHTHOUSE.



RUDYERD'S LIGHTHOUSE.

the Eddystone Rock, and almost every soul on board perished; so that the erection of a lighthouse upon the dangerous reef remained as much a necessity as ever.

Mr. Smiles graphically describes the coming architect of the period. He did not, however, come from the class of architects or builders, or even of mechanics; and as for the class of engineers, it had not even yet sprung into existence. The projector of the next lighthouse for the Eddystone was again a London mercer, who kept a silk shop on Ludgate Hill. John Rudyerd—for such was his name—was, however, a man of unquestionable genius, and possessed of much force of character. He was the son of a Cornish labourer, whom nobody would employ—his character was so bad; and the rest of the family were no better, being looked upon in their neighbourhood as “a worthless set of ragged

beggars." John seems to have been the one sound chick in the whole brood. He had a naturally clear head and honest heart, and succeeded in withstanding the bad example of his family. When his brothers went out pilfering, he refused to accompany them, and hence they regarded him as sullen and obstinate. They ill-used him, and he ran away. Fortunately he succeeded in getting into the service of a gentleman at Plymouth, who saw something promising in his appearance. The boy conducted himself so well in the capacity of a servant, that he was allowed to learn reading, writing, and accounts; and he proved so quick and intelligent, that his kind master eventually placed him in a situation where his talents could have better scope for exercise than in his service, and he succeeded in thus laying the foundation of the young man's success in life.

We are not informed of the steps by which Rudyerd marked his way upward, until we find him called from his silk-mercier's shop to undertake the rebuilding of the Eddystone Lighthouse. But it is probable that by this time he had become well known for his mechanical skill in design, if not in construction, as well as for his thoroughly practical and reliable character as a man of business; and that for these reasons, amongst others, he was selected to conduct this difficult and responsible undertaking.

After the lapse of about three years from the destruction of Winstanley's fabric, the Brothers of the Trinity, in 1706, obtained an Act of Parliament enabling them to rebuild the lighthouse, with power to grant a lease to the undertaker. It was taken by one Captain Lovet for a period of ninety-nine years, and he it was that found out and employed Rudyerd. His design of the new structure was simple but masterly. He selected the form that offered the least possible resistance to the force of the winds and the waves, avoiding the open galleries and projections of his predecessor. Instead of a polygon he chose a cone for the outline of his building, and he carried up the elevation in that form. In the practical execution of the work he was assisted by two shipwrights from the king's yard at Woolwich, who worked with him during the whole time he was occupied in the erection.

The main defect of the lighthouse consisted of the faultiness of the material of which it was built; for, like Winstanley's, it was of wood. The means employed to fix the work to its foundation proved quite efficient; dove-tailed holes were cut out of the rock, into which strong iron bolts or branches were keyed, and the interstices were afterwards filled with molten pewter. To these branches were firmly fixed a crown of squared oak barks, across these a set of shorter barks, and so on till a basement of solid wood was raised, the whole being firmly fitted and tied together with tre-nails and screw-bolts. At the same time, to increase the weight and vertical pressure of the building, and thereby present a greater resistance to any disturbing forces, Rudyerd introduced numerous courses of Cornish moorstone, as well jointed as possible, and cramped with iron. It is not necessary to follow the details of the construction further than to state that outside the solid timber and stone courses strong upright timbers were fixed, and carried up as the work proceeded, binding the whole firmly together. Within these upright timbers the rooms of the lighthouse were formed, the floor of the lowest—the store-room—being situated twenty-seven feet above the highest side of the rock. The upper part of the building comprehended four rooms, one above another, chiefly formed by the upright outside timbers, scarfed—that is, the ends overlapping, and firmly fastened together. The whole building was, indeed, an

admirable piece of ship-carpentry, excepting only the moorstone, which was merely introduced, as it were, by way of ballast. * The outer timbers were tightly caulked with oakum, like a ship, and the whole was payed over with pitch. Upon the roof of the main column Rudyerd fixed his lantern, which was lit by candles, seventy feet above the highest side of the foundation, which was of a sloping form. From its lowest side to the summit of the ball fixed on the top of the building was ninety-two feet, the timber column resting on a base of twenty-three feet four inches. "The whole building," says Smeaton, "consisted of a simple figure, being an elegant frustum of a cone, unbroken by any projecting ornaments, or anything whereon the violence of the storm could lay hold." The structure was completely finished in 1709, though the light was exhibited in the lantern as early as the 28th of July, 1706.

That the building erected by Rudyerd was, on the whole, well adapted for the purpose for which it was intended, was proved by the fact that it served as a lighthouse for ships navigating the English Channel for nearly fifty years. The lighthouse was at first attended by only two men. It happened, however, that one of the keepers was taken ill and died, and only one man remained to do the work. He signalled for assistance, but the weather prevented any boat from reaching the rock for nearly a month. What, then, was the surviving man to do with the dead body of his comrade? The thought struck him that if he threw it into the sea, he might be charged with murder. He determined, therefore, to keep the corpse in the lighthouse until a boat should come off from the shore. At last a boat came off, but the weather was still so rough that a landing was only effected with the greatest difficulty. By this time the effluvia from the corpse was overpowering; it filled the apartments of the lighthouse, and the men were compelled to dispose of the body by throwing it into the sea. In future three men were always employed.

The chief defect of Rudyerd's building consisted of the material of which it was constructed; the necessary lights and heat proceeding from them made it a very dangerous structure. "The immediate cause of the accident by which the lighthouse was destroyed was never ascertained. All that became known was, that about two o'clock in the morning of the 2nd December, 1755, the light-keeper on duty, going into the lantern to snuff the candles, found it full of smoke. The lighthouse was on fire! In a few minutes the wooden fabric was in a blaze. Water could not be brought up the tower by the men in sufficient quantities to be thrown with any effect upon the flames raging above their heads; the molten lead fell down upon the light-keepers, into their very mouths,* and they fled from room to room, the fire following them down towards the sea. From Cawsand and Rame Head the unusual glare of light proceeding from the Eddystone was seen in the early morning, and fishing-boats, with men, went off to the rock, though a fresh east wind was blowing. By the time they reached it, the light-keepers had not only been driven from all the rooms, but, to protect themselves from the molten lead and red-hot bolts and falling timbers, they had been compelled to take shelter under a ledge of the rock on its eastern side, and after considerable delay the poor fellows were

* It appears that a post-mortem examination of one of the light-keepers who died from injuries received during the fire took place some thirteen days after its occurrence, and a flat oval piece of lead some seven ounces in weight was taken out of his stomach, having proved the cause of his death.

taken off, more dead than alive. And thus was Rudyerd's lighthouse also completely destroyed." The Eddystone rocks being in such an exposed place, right in the way of so much shipping, it was resolved at once to rebuild the lighthouse.

Previous to the date of the destruction of Rudyerd's timber building, Captain Lovet, the former lessee of the lighthouse, had died, and his interest in it had been acquired by Mr. Robert Weston and two others. Weston immediately applied to the Earl of Macclesfield, President of the Royal Society, who strongly recommended John Smeaton, then away in the north. Weston immediately wrote to him, but Smeaton, thinking apparently that it only referred to some repairs required in the building, declined to come up, unless there was to be some degree of permanency in his engagement. The answer he received was to the effect that the building was no more; that it must be rebuilt; and concluded with the words, "thou art the man to do it."

The life of Smeaton is one of the most interesting to be found among "The Lives of the Engineers." He was born near Leeds, on the 8th of June, 1724, his father being a respectable attorney, and he received an excellent education. "Young Smeaton," says Mr. Smiles, "was not much given to boyish sports, early displaying a thoughtfulness beyond his years. Most children are naturally fond of building up miniature fabrics, and perhaps still more so of pulling them down. But the little Smeaton seemed to have a more than ordinary love of contrivance, and that mainly for its own sake. He was never so happy as when put in possession of any cutting tool, by which he could make his little imitations of houses, pumps, and windmills. Even whilst a boy in petticoats, he was continually drawing circles and squares, and the only playthings in which he seemed to take any real pleasure were his models of things that would 'work.' When any carpenters or masons were employed in the neighbourhood of his father's house, the inquisitive boy was sure to be among them, watching the men, observing how they handled their tools, and frequently asking them questions. His life-long friend, Mr. Holmes, who knew him in his youth, has related, that having one day observed some millwrights at work, shortly after, to the great alarm of his family, he was seen fixing something like a windmill on the top of his father's barn. On another occasion, when watching some workmen fixing a pump in the village, he was so lucky as to procure from them a piece of bored pipe, which he succeeded in fashioning into a working pump that actually raised water. His odd cleverness, however, does not seem to have been appreciated; and it is told of him that amongst other boys he was known as 'Fooly Smeaton,' for though forward enough in putting questions to the workpeople, amongst boys of his own age he was remarkably shy, and, as they thought, stupid." He made great progress at the Leeds Grammar School in geometry and arithmetic, still carrying on his mechanical studies at home. It happened one day that some mechanics came into the neighbourhood to erect a "fire-engine," as the steam-engine was then called, for pumping water from the Garforth coal mines. Smeaton watched their operations, and thereupon commenced the erection of a miniature engine at home, provided with pumps and other apparatus, which he succeeded in getting to work before the colliery engine was ready. He immediately set it to work on one of his father's fish-ponds, which he succeeded in pumping completely dry, killing all the fish, much to his father's annoyance. By the time he had arrived at his fifteenth year, he had contrived to make a turning-lathe, on

which he turned wood and ivory, making little presents of boxes and other articles for his friends. His father had destined young Smeaton for the law, but at last consented to his son's wish to become a mathematical instrument maker. The son came to London, and was soon enabled to earn enough for his own maintenance. He did not, however, live a mere workman's life, but frequented the society of educated men, and was a regular attendant at the meetings of the Royal Society. We find him at the age of twenty-six reading papers before that most learned society. He had already attempted improvements in the mariner's compass; had invented a machine for measuring the amount of "way" on a ship at sea; and designed improvements in the air-pump, in ships' tackle, and in water and wind-mills. He had already acquired an honourable reputation as a scientific engineer when the question of rebuilding the Eddystone Lighthouse arose.

This afforded Smeaton a grand opening for advancement, and as soon as some preliminaries were arranged, he came to town, where he studied the subject in its entirety. He soon came to the conclusion that stone was the only material to employ in the construction of a lighthouse, contrary to the opinion of the Brethren of the Trinity House, who had faith in wood, and that only. He also devised a system of dovetailing, then scarcely known in masonry, though common enough in carpentry. All these investigations were made before Smeaton had even paid a visit to the exposed site on which the lighthouse was to be built. It was not till March, 1756, that he set out from London to Plymouth, a journey which occupied him six days, on account of the badness of the roads. At Plymouth he met Josias Jessop, to whom he had been referred for information as to the previous lighthouse. Jessop was then a foreman of shipwrights in the dockyard, and a first-class draughtsman, full of ingenuity and mechanical knowledge. Smeaton was very anxious to go out to the rocks at once; but the sea was so heavy that no opportunity occurred till the 2nd of April, when they were able to reach them. The sea was breaking over the landing-place with such violence that there was no possibility of landing. All that the enthusiastic engineer could do was to view the cone of bare rock—the mere crest of the mountain whose base was laid so far in the sea-deeps beneath. Three days later another voyage was made, and he was enabled to land on the site of his future triumph. He stayed there more than two hours, when he was compelled by the roughness of the sea to leave the rock. Several subsequent trials were unsuccessful. On the 22nd of the same month, after a lapse of seventeen days, Smeaton was able to effect his second landing at low water. After a further inspection, the party retreated to their sloop, which lay off until the tide had fallen, when Smeaton again landed, and the night being perfectly still, he says, "I went on with my business till nine in the evening, having worked an hour by candlelight." The following day he again landed, and pursued his operations until interrupted by the ground-swell, which sent the surf and waves high upon the reef, and the wind rising, the sloop was forced to put for Plymouth. This is, as we shall see, but a sample of the difficulties attending the actual construction of the tower. Lord Ellesmere said of him that "bloody battles had been won, and campaigns conducted to a successful issue, with less of personal exposure to physical danger on the part of the commander-in-chief, than was constantly encountered by Smeaton during the greater part of those years in which the lighthouse was in course of erection. In all works of

danger he himself led the way—was the first to spring upon the rock and the last to leave it; and by his own example he inspired with courage the humble workmen engaged in carrying out his plans; who, like himself, were unaccustomed to the special terrors of the scene.”*

On his return to town, after several other visits, when he arranged for the formation of a better landing-place, he made his report to the proprietors, and was fully authorised to proceed with the design. He accordingly proceeded to make a careful model of the lighthouse as he intended it to be built. This having been approved by the proprietors and by the Lords of the Admiralty, the engineer set out for Plymouth, arranging at Dorchester, on his way, for a supply of Portland stone, of which it was finally determined that the lighthouse should be mainly constructed. Artificers and foremen were engaged; vessels provided for the transport of men and material, and Mr. Jessop was appointed general assistant, or as it is now termed, Resident Engineer. Mr. Smeaton fixed the centre, and laid down the lines on the afternoon of the 3rd of August, 1756, and from that time the work proceeded, though with many interruptions from bad weather and heavy seas. At best, six hours' work was all that could be performed at one time, and when it was possible the men worked by torchlight. One principal object of the first season was to get the dovetail recesses cut out of the rock for the reception of the foundation-stones. The *Neptune* buss was employed as a store-ship, and rode at anchor a convenient distance from the rock in about twenty fathoms of water. For many days the men could not land from her, and even had they been able to do so, must have been washed off the rock, unless lashed to it. At such times the provisions ran short, no boat being able to come off from Plymouth. Towards the end of October, the yawl riding at the stern of the buss broke loose by stress of weather and was lost. Smeaton was very anxious to finish the boring of the foundation-holes during that season, and the men still persevered when the weather gave the slightest chance, although sometimes only able to labour two hours out of the twenty-four.

On the completion of the work at the end of November, the party prepared to return to the yard on shore. The voyage proved most dangerous. Not being able, in consequence of the gale that was blowing, to make Plymouth Harbour, the *Neptune* was steered for Fowey, on the coast of Cornwall. The wind rose higher and higher, until it blew quite a storm; and in the night, Mr. Smeaton, hearing a sudden alarm and clamour amongst the crew overhead, ran upon deck in his shirt to ascertain the cause. It was raining hard, and quite a hurricane was raging. “It being dark,” he says, “the first thing I saw was the horrible appearance of breakers almost surrounding us; John Bowden, one of the seamen, crying out, ‘For God’s sake, heave hard at that rope if you mean to save your lives!’ I immediately laid hold of the rope at which he himself was hauling as well as the other seamen, though he was also managing the helm. I not only hauled with all my strength, but called to and encouraged the workmen to do the same thing.” Their sails were carried away or torn to ribbons, while the sea could be heard beating on the rocks, though nothing of the coast could be seen. Fortunately the vessel obeyed her helm, and they put to sea again. At daybreak they found themselves out of sight of land, and

* “Essays on Engineering.”

driving for the Bay of Biscay. Wearing ship, they stood once more for the coast, and before night sighted the Land's End. Finally, after having been blown to sea for four days, they came to anchor in Plymouth Sound, much to their own joy and that of their friends.

Winter was very fully occupied in dressing stones at the yards ashore for next season's work. Mr. Smeaton himself laid all the lines on the workshop floor in chalk, in order to insure the greatest possible accuracy in fitting. Nearly 450 tons of stone were thus dressed by the time the weather was sufficiently favourable to continue operations on the rock. During one of his visits to the quarries, a severe storm of thunder and lightning occurred, by which the spire of Lostwithiel Church was shattered, and this turned his attention to the necessity of protecting his lighthouse in some way from the similar danger to which it would be exposed. Franklin had just before published his mode of protecting tall buildings by conductors, and Smeaton decided to adopt his plan. The work of building fairly commenced in the summer of 1757, the first stone, of two and a quarter tons weight, being in its place on the morning of Sunday, the 12th of June. By the evening of the following day the first course of four stones was laid, these being all required from the sloping nature of the Eddystone Rock. The actual diameter of the tower itself kept increasing until it reached the upper level of the rock. Thus the second course consisted of thirteen pieces, the third of twenty-five, and so on. The workmen were sometimes interrupted by ground-swells and heavy seas, which kept them off the rock for days together, but, at length, on the sixth course being laid, it was found that the building had been raised above the average wash of the sea, and thenceforward the progress of the work was much more rapid. The stones, when brought off from the vessels, were all landed in their proper order, and everything was done to facilitate the rapid progress of the work. Smeaton superintended the construction of nearly the whole building, and was ever foremost in the post of danger. Whilst working at the rock on one occasion, an accident occurred which might well have proved more serious in its results. "The men were about to lay the centre stone of the seventh course, on the evening of the 11th of August, when Mr. Smeaton was enjoying the limited promenade afforded by the level platform of stone which had, with so much difficulty, been raised; but, making a false step into one of the cavities made for the joggles, and being unable to recover his balance, he fell from the brink of the work down among the rocks on the west side. The tide being low at the time, he speedily got upon his feet, and at first supposed himself little hurt, but shortly after he found that one of his thumbs had been put out of joint. He reflected that he was fourteen miles from land, far from a surgeon, and that uncertain winds and waves lay between. He therefore determined to reduce the dislocation at once; and, laying fast hold of the thumb with his other hand, and giving it a violent pull, it snapped into its place again, after which he proceeded to fix the centre stone of the building." The work now proceeded steadily, occasional damage being done by the heavy seas washing over the stones, tools, and materials.

The following winter was very tempestuous, and the floating light-ship, stationed about two miles from the rock, was driven from its moorings, though it eventually reached harbour in safety. It was the 12th of May before Smeaton, anxious to see how his tower



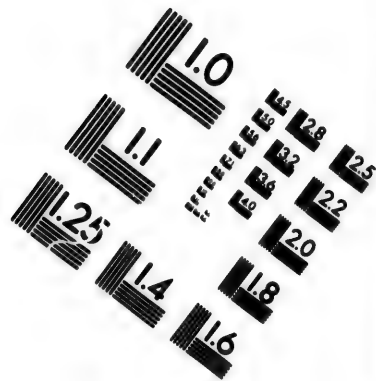
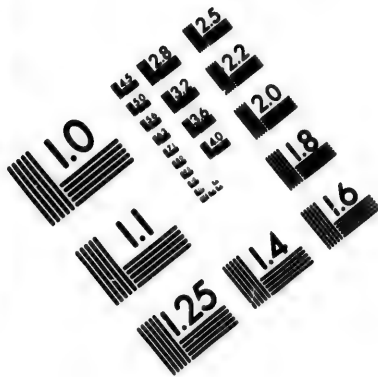
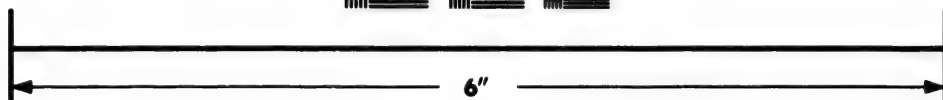
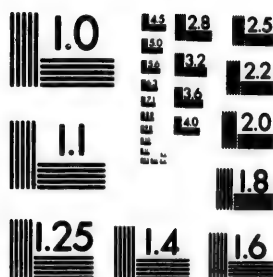


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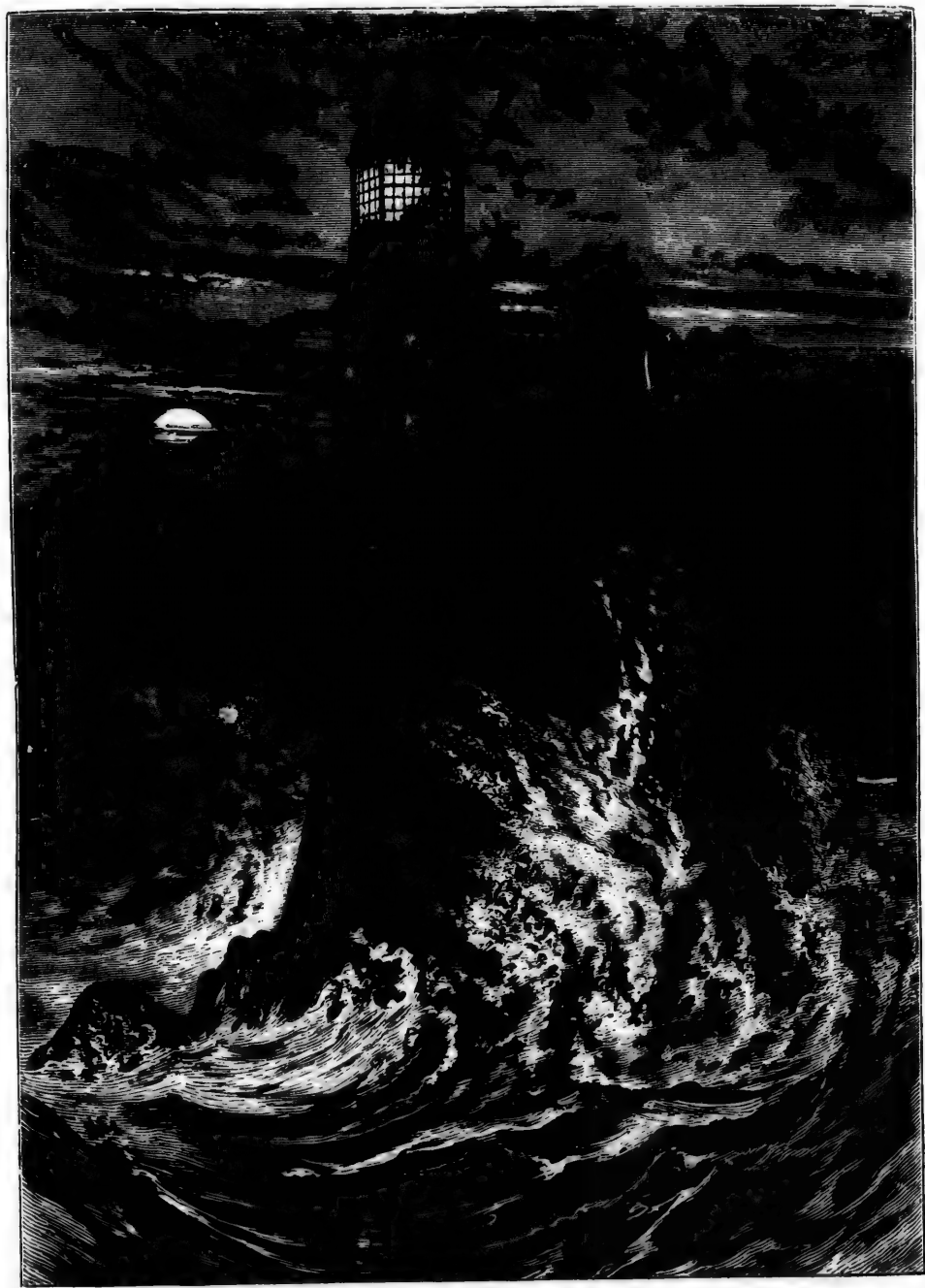


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THE EDDYSTONE LIGHTHOUSE

had stood the winter storms, could land on the rock. He was delighted to find that the entire work remained intact, as he had left it. At the end of this season, the twenty-ninth course of stones had been laid, and the apartments of the lighthouse-keepers commenced. While living at Plymouth, Smeaton used to come out upon the Hoe* with his telescope and, from the spot where the Spanish Armada was first descried making for the English coast, peer out towards the rocks on one of which his lighthouse stood. "There were still many who persisted in asserting that no building erected of stone could possibly stand upon the Eddystone; and again and again the engineer, in the dim grey of the morning, would come out and peer through his telescope at his deep-sea lamp-post. Sometimes he had to wait long, until he could see a tall white pillar of spray shoot up into the air. Thank God! it was still safe. Then, as the light grew, he could discern his building, temporary house and all, standing firm amidst the waters; and, thus far satisfied, he could proceed to his workshops, his mind relieved for the day."

The winter following the third season was spent by Smeaton in London, where he made the designs for the cast and wrought iron and copper works of the lantern, the glass, and rails of the balcony, which were carried out under his own eye. The ensuing season proved so stormy that it was the 5th of July before a landing could again be made on the rock, but from this point the work proceeded with such rapidity that in thirteen days two entire rooms were erected, and by the 17th of August the last pieces of the corona were set, and the forty-sixth and last course of masonry laid, bringing the tower to its specified height of seventy feet. "The last mason's work done was the cutting out of the words '*Laus Deo*' upon the last stone set over the door of the lantern. Round the upper store-room upon the course under the ceiling, had been cut, at an earlier period, 'Except the Lord build the house, they labour in vain that build it.' The iron-work of the balcony and the lantern were next erected, and, over all, the gilt ball, the screws of which Smeaton fixed with his own hands, 'that in case,' he says, 'any of them had not held quite tight and firm, the circumstance might not have been slipped over without my knowledge.' Moreover, this piece of work was dangerous as well as delicate, being performed at a height of some hundred and twenty feet above the sea. Smeaton fixed the screws while standing on four boards nailed together, resting on the cupola; his assistant, Roger Cornthwaite, placing himself on the opposite side, so as to balance his weight whilst he proceeded with the operation. Smeaton worked with the men in fitting the lantern and interior arrangements. The light was first exhibited on the night of the 16th of October, 1759. About three years after its completion, one of the most terrible storms ever known raged for days along the south-west coast; and though incalculable ruin was inflicted upon harbours and shipping by the hurricane, all the damage done to the lighthouse was repaired by a little gallipot of putty."

Whatever may be the truth regarding the foundations of the Eddystone, the old lighthouse has done good work for considerably over a century. Sometimes when the sea rolls in with more than usual fury the lighthouse is enveloped in spray, and when struck by a strong wave, the central portion shoots up the perpendicular shaft and leaps quite over

* The Hoe is an elevated promenade, forming the sea-front of Plymouth, and overlooking the Sound.

the lantern, but soon its brilliant light shines forth again, a warning and a guide to the mariner. When a wave hurls itself upon the lighthouse, the report of the shock is like a cannon, and a tremor passes through the building. At first the lighthouse-keepers were afraid for their lives. The year after the completion of the tower, a terrible storm raged, the sea dashing over the lighthouse so that those inside dare not open the lantern door, nor any other, for even an instant. A man who visited the rock after some similar storm wrote to Mr. Jessop, "The house did shake as if a man had been up in a great tree.

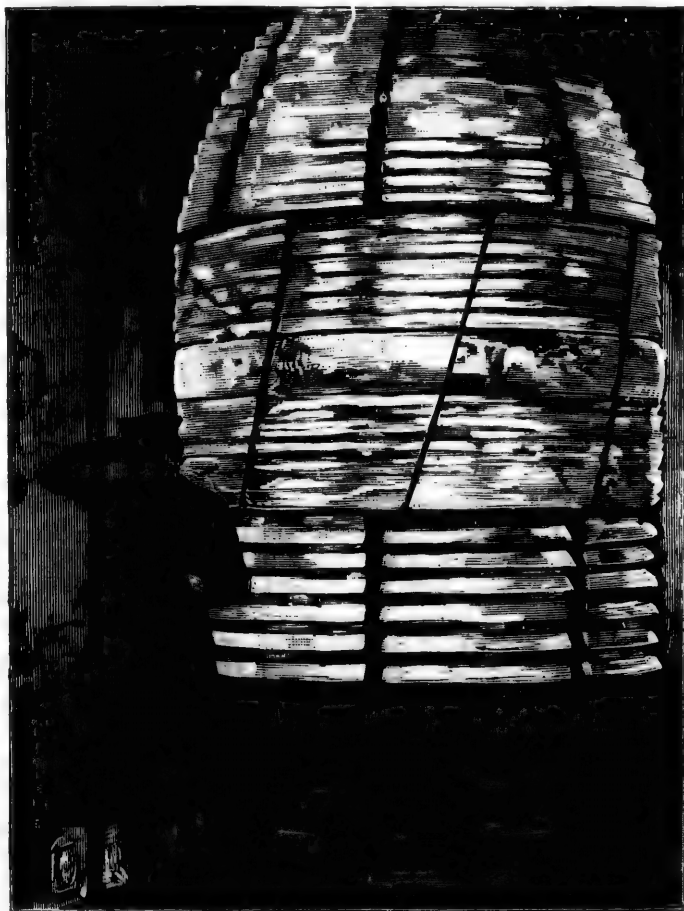


PORTRAIT OF SMEATON.

The old men were almost frightened out of their lives, wishing they had never seen the place, and cursing those that first persuaded them to go there. The fear seized them in the back, but rubbing them with oil of turpentine gave them relief." The men, however, soon became used to the life; and Smeaton mentions the case of one of them who was even accustomed to give up to his companions his turn for going on shore.

"Many a heart," says Mr. Smiles, "has leapt with gladness at the cry of 'The Eddystone in sight!' sung out from the maintop. Homeward-bound ships, from far-off ports, no longer avoid the dreaded rock, but eagerly run for its light as the harbinger of safety. It might even seem as if Providence had placed the reef so far out at sea as the foundation for a beacon such as this, leaving it to man's skill and labour to finish His work. On entering the English Channel from the west and the south, the cautious navigator feels

his way by early soundings on the great bank which extends from the Channel into the Atlantic, and these are repeated at fixed intervals until land is in sight. Every fathom nearer shore increases a ship's risks, especially on dark nights. The men are on the look-out, peering anxiously into the dark, straining the eye to catch the glimmer of a light, and



INTERIOR OF THE LIGHT-CHAMBER OF THE EDDYSTONE.

when it is known that 'the Eddystone is in sight!' a thrill runs through the ship, which can only be appreciated by those who have felt or witnessed it after long months of weary voyaging.

"By means of similar lights, of different arrangements and of various colours, fixed and revolving, erected upon rocks, islands, and headlands, the British Channel is now lit up along its whole extent, and is as safe to navigate in the darkest night as in the brightest

sunshine. The chief danger is from fogs which alike hide the lights by night and the land by day. Some of the homeward-bound ships entering the Channel from North American ports first make the St. Agnes Light, on the Scilly Isles, revolving once a minute, at a height of 138 feet above high water. But most Atlantic ships keep further south in consequence of the nature of the soundings about the Scilly Isles; and hence they oftener make the Lizard Lights first, which are visible about twenty miles off.

"From this point the coast retires, and in the bend lie Falmouth (with a revolving light on St. Anthony's Point), Fowey, the Looes, and Plymouth Sound and Harbour; the coast line again trending southward until it juts out into the sea, in the bold craggy bluffs of Bolt Head and Start Point, on the last of which is another house with two lights—one, revolving, for the Channel, and another, fixed, to direct vessels inshore clear of the Skerries Shoal. But between the Lizard and Start Point, which form the two extremities of this bend in the land of Cornwall and Devonshire, there lies the Eddystone Rock and Lighthouse, standing fourteen miles out from the shore, almost directly in front of Plymouth Sound and in the line of coasting vessels steaming or beating up Channel.

"On the south are seen the three Croquet Lights on the Jersey side; and on the north the two fixed lights on Portland Bill. The west is St. Catherine's, a brilliant fixed light on the extreme south point of the Isle of Wight. Next are the lights exhibited on the Nab, and then the single fixed light exhibited on the Ower vessel. Beachy Head, on the same line, exhibits a powerful revolving light 285 feet above high water, its interval of greatest brilliancy occurring every two minutes. Then comes Dungeness, exhibiting a fixed red light of great power, situated at the extremity of the low point of Dungeness beach. Next are seen Folkestone, and then Dover Harbour Lights, whilst on the south are the flash light, recently stationed on the Verne Bank; and further up Channel, on the French coast, is seen the brilliant revolving light on Cape Grisnez. The Channel is passed with the two South Foreland Lights, one higher than the other, on the left; and the Downs are entered with the South Sandhead floating light on the right; and when the Gull and the North Sandhead floating lights have been passed on the one hand, and North Foreland on the other, then the Tongue, the Prince's Channel, and the Girdler are passed." The Nore Light passed, the navigation of the Thames commences.

CHAPTER XI.

THE LIGHTHOUSE (*continued*).

The Bell Rock—The good Abbot of Arberbrothok—Ralph the Rover—Rennie's grand Lighthouse—Perils of the Work—Thirty-two Men apparently doomed to Destruction—A New Form of Outward Construction—Its successful Completion—The Skerryvore Lighthouse and Alan Stevenson—Novel Barracks on the Rock—Swept Away in a Storm—The Unshapely Seal and Unfortunate Cod—Half-starved Workmen—Out of Tobacco—Difficulties of Landing the Stones—Visit of M. de Quatrefages to Héhaux—Description of the Lighthouse Exterior—How it Rocks—Practice *versus* Theory—The Interior—A Parisian Apartment at Sea.

SOME eleven miles eastward from the mainland of Scotland, near the entrances to the Firths of Forth and Tay, lies an extensive ledge of very dangerous rocks, nearly two miles in length. This sunken reef was a source of much peril to the unfortunate sailors

driven too near its nearly hidden dangers, and early in the fourteenth century the Abbot of Arbroath, or Arberbrothok, caused a bell to be placed upon the principal rock, so that—

“When the Rock was hid by the surge’s swell,
The mariners heard the warning bell;
And then they knew the perilous Rock,
And blessed the Abbot of Arberbrothok.”

Southey has, in his ballad of “The Inchcape Rock,” immortalised the tradition* that a notorious pirate cut the bell from the rock—

“Down sank the bell with a gurgling sound,
The bubbles arose and burst around;
Quoth Sir Ralph, ‘The next who comes to the Rock,
Won’t bless the Abbot of Arberbrothok.’”

And so the rover sailed away, and grew rich with plundered store, till at length he thought of Scotland once again, and turned his vessel’s head for home. He approached her coasts in haze and fog, and knew he could not be far from the rocky shore.

“They hear no sound, the swell is strong;
Though the wind hath fallen they drift along,
Till the vessel strikes with a shivering shock,—
‘Oh, Christ! it is the Inchcape Rock!’”

“Sir Ralph the Rover tore his hair;
He curst himself in his despair;
The waves rush in on every side,
The ship is sinking beneath the tide.”

Nothing was done to replace the bell or set a beacon on the reef until the beginning of the present century, when, after many plans had been discussed, John Rennie was ordered by the Board of Commissioners to examine the site and report on the subject generally. He recommended a substantial stone lighthouse, similar to that on the Eddystone. Although the Inchcape Rock was not so long uncovered by the tide as the former, after a few courses had been laid, there would be no greater delay in completing the building. The Commissioners obtained from Parliament the requisite powers in 1806; Rennie was appointed engineer, with Robert Stevenson as assistant engineer.

The whole of the year 1807 was occupied in constructing the necessary vessels for conveying the stones, and in erecting suitable machinery and building shops at Arbroath, which was fixed upon as the most convenient point on the coast for carrying on the land operations. Some progress was made on the rock itself, where a smith’s forge was erected and a temporary beacon raised, while a floating light, fitted up on an old fishing-boat, was anchored near the reef until the lighthouse could be completed. During the short

* The following is the tradition from an ancient source:—“By the east of the Isle of May, twelve miles from all land in the German Sea, lyes a great hidden rock, called Inchcape, very dangerous to the navigators, because it is overflowed every tide. It is reported that, in old times, there was upon the said rock a bell, fixed upon a tree or timber, which rang continually, being moved by the sea, giving notice to the sailors of the danger. This bell or clocke was put there by the Abbot of Arberbrothok, and being taken down by a sea-pirate, a year thereafter he perished upon the same rock, with ship and goodes, by the righteous judgment of God.” (Stoddart’s “Remarks on Scotland.”)

period in which the rocks were uncovered or unexposed to the fury of the waves, some progress was made with the excavations for the foundations. The dangerous nature of the employment may be illustrated by the following brief account of an accident which happened to the workmen on the 2nd of September, before the excavation for the first course of stones had been completed. An additional number of masons had that morning come off from Arbroath in the tender named the *Smeaton*, in honour of the engineer of the Eddystone, and had landed them safely on the rock. The vessel rode off at some distance. The wind rising, the men began to be uneasy as to the security of the *Smeaton's* cables, and a party went off in a boat to examine whether she was secure, but before they could reach the vessel's side they found she had already gone adrift, leaving the greater part of the men upon the reef in the face of a rising tide.

By the time the *Smeaton's* crew had got her mainsail set, and made a tack towards their companions, she had drifted about three miles to leeward, with both wind and tide against her, and it was clear that she could not possibly make the rock until long after it had been completely covered. There were thirty-two men in all on the rock, provided with but two boats, capable of carrying only twenty-four persons in fine weather. Mr. Stevenson seems to have behaved with great coolness and presence of mind; though he afterwards confessed that of the two feelings of hope and despair the latter largely predominated. Fully persuaded of the perils of the situation, he kept his fears to himself, and allowed the men to continue their occupations of boring and excavating.

"After working for about three hours, the water began to rise along the lower parts of the foundations, and the men were compelled to desist. The forge-fire became extinguished; the smith ceased from hammering at the anvil, and the masons from hewing and boring; and when they took up their tools to depart, and looked around, their vessel was not to be seen, and the third of their boats had gone after the *Smeaton*, which was drifting away in the distance! Not a word was uttered, but the danger of their position was comprehended by all. They looked towards their master in silence; but the anxiety which had been growing in his mind for some time had now become so intense that he was speechless. When he attempted to speak, he was so parched that his tongue refused utterance. Turning to one of the pools on the rock, he lapped a little water, which gave him relief, though it was salt; but what was his happiness when, on raising his head, some one called out, 'A boat! a boat!' and sure enough a large boat was seen through the surge making for them. She proved to be the Bell Rock pilot-boat, which had come off from Arbroath with letters, and her timely arrival doubtless saved the lives of the greater part of the workmen. They were all taken off and landed in safety, though completely drenched and exhausted."

Rennie, accompanied by one of his sons, visited the rock on the 5th of October, 1807, the day before the works were suspended for the winter. They came off from Arbroath, and stayed on board the lighthouse-yacht all night, where Stevenson met him, and has recorded the delightful conversations held on general and professional matters. On the following morning Rennie landed, amidst great *éclat* and a display of all the available colours, to inspect the progress made. The whole party, workmen and all, returned to shore for the season that day.

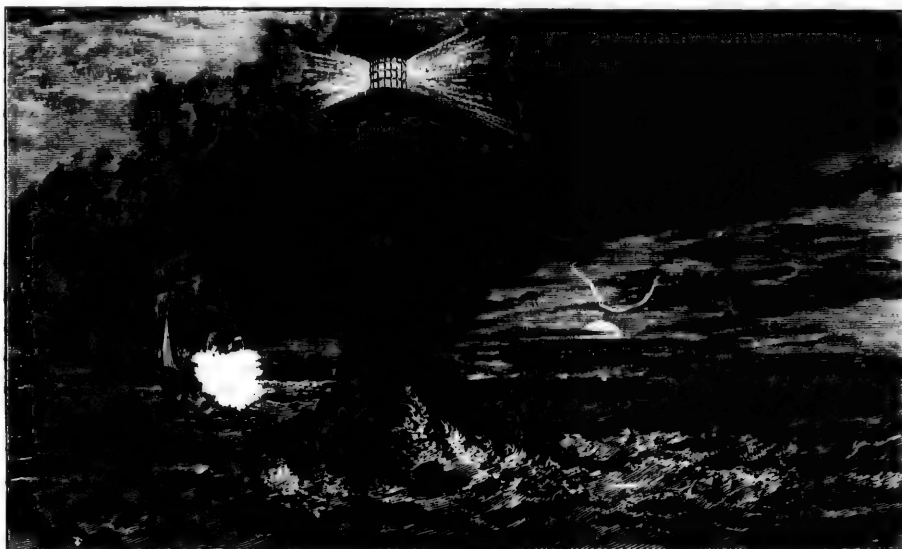
The preparation of the stone blocks occupied next winter, and by the spring large numbers were ready and were floated off. In May, 1808, the excavations on the rock were continued, and on the 10th of July the first stone was laid with considerable ceremony. By the last week of November three courses of masonry had been laid. By the end of 1809 the tower had been built to a height of thirty feet, and was almost secure from the fury of the waves. "In his report to the commissioners he stated that he found that the form of slope which he had adopted for the base of the tower, as well as the curve of the building, fully answered his expectations—that they presented comparatively small obstructions to the roll of the waves, which played round the column with ease." The curve of this tower at the base is much greater than that of the Eddystone. The Bell Rock Lighthouse was completed by the end of 1810, and the light was regularly exhibited after the 1st of February, 1811. Counting to the top of the lantern, it is 127 feet high. It may here be remarked that in many works the credit of designing and building this lighthouse has been given to Robert Stevenson, the resident engineer. Rennie, however, has the only rightful claim to be so considered; he acted throughout as chief engineer, furnished the design down to the pettiest details, settled the kind of stone and other materials to be used, down even to the mortar and mode of mixing it.

Another work of great labour and difficulty was the erection of a lighthouse on the Skerryvore Rocks, which lie twelve miles W.S.W. of the Isle of Tyree in Argyllshire, and were formerly the scene of numerous wrecks. The operations were commenced in 1838, the architect being Alan Stevenson, son of the Robert Stevenson who was employed on the Bell Rock Lighthouse. The engineer gave the world a succinct account* of the difficulties, dangers, and successful issue of the undertaking.

The actual construction of the lighthouse had no very remarkable points of difference with the works of Smeaton or Rennie. Stevenson built a rather novel structure on the rock as a temporary barrack for the workmen. It consisted of a wooden tower perched upon a triangular framework, under which was an open gallery, the floor of which was removed at the end of each season, so as to allow free space for the passage of the sea during the storms of winter, but on which, during summer, they kept the stock of coals, the tool-chest, the beef and beer casks, and other smaller material, which they could not, even at that season of the year, leave on the rock itself. Next came the kitchen and provision-store, a six-sided apartment about twelve feet in diameter, and somewhat more than seven feet high, in which small space—curtailed as it was by the seven beams which passed through it—stood a caboose, capable of cooking for forty men, and various cupboards and lockers lined with tin, for holding biscuits, meal and flour, &c. The next storey held two apartments: one for Mr. Stevenson, in which he had his hammock, desk, chair and table, books and instruments. The top storey was surmounted by a pyramidal roof, and was lined with four tiers of berths, capable of accommodating thirty people. The framework was erected on a part of the rock as far removed as possible from the proposed foundation of the lighthouse tower; but in a great gale which occurred on the 3rd of November it was entirely destroyed and swept from the rock, nothing remaining to point out its site but a

* "Account of the Skerryvore Lighthouse, with Notes on the Illumination of Lighthouses," by Alan Stevenson.

few broken and twisted iron stanchions, and attached to one of them a piece of a beam, so shaken and rent by dashing against the rock as literally to resemble a bunch of laths. Thus did one night obliterate the traces of a season's toil, and blast the hopes which the workmen fondly cherished of a stable dwelling on the rock, and of refuge from the miseries of sea-sickness, which the experience of the season had taught many of them to dread more than death itself. A more successful attempt was subsequently made, and the second erection braved the storm for several years after the works were finished. "Perched forty feet above the wave-beaten rock," says Stevenson, "in this singular abode, the writer of



LIGHTHOUSE ON THE INCHCAPE ROCK.

this little volume* has spent many a weary day and night at those times when the sea prevented any one going down to the rock, anxiously looking for supplies from the shore, and earnestly longing for a change of weather favourable to the re-commencement of the works. For miles around nothing could be seen but white foaming breakers, and nothing heard but howling winds and lashing seas. At such seasons most of our time was spent in bed; for there alone we had effectual shelter from the winds and the spray, which searched every cranny in the walls of the barrack. Our slumbers, too, were at times fearfully interrupted by the sudden pouring of the sea over the roof, the rocking of the house on its pillars, and the spirting of water through the seams of the doors and windows: symptoms which, to one suddenly aroused from sound sleep, recalled the appalling fate of the former barrack, which had been engulfed in the foam not twenty yards from our dwelling, and for a moment seemed to summon us to a similar fate. On two occasions, in particular,

* "A Rudimentary Treatise on the History, Construction, and Illumination of Lighthouses." (Woele's Series.)

those sensations were so vivid as to cause almost every one to spring out of bed; and some of the men flew from the barrack by a temporary gangway to the more stable but less comfortable shelter afforded by the bare wall of the lighthouse tower, then unfinished, where they spent the remainder of the night in the darkness and the cold."

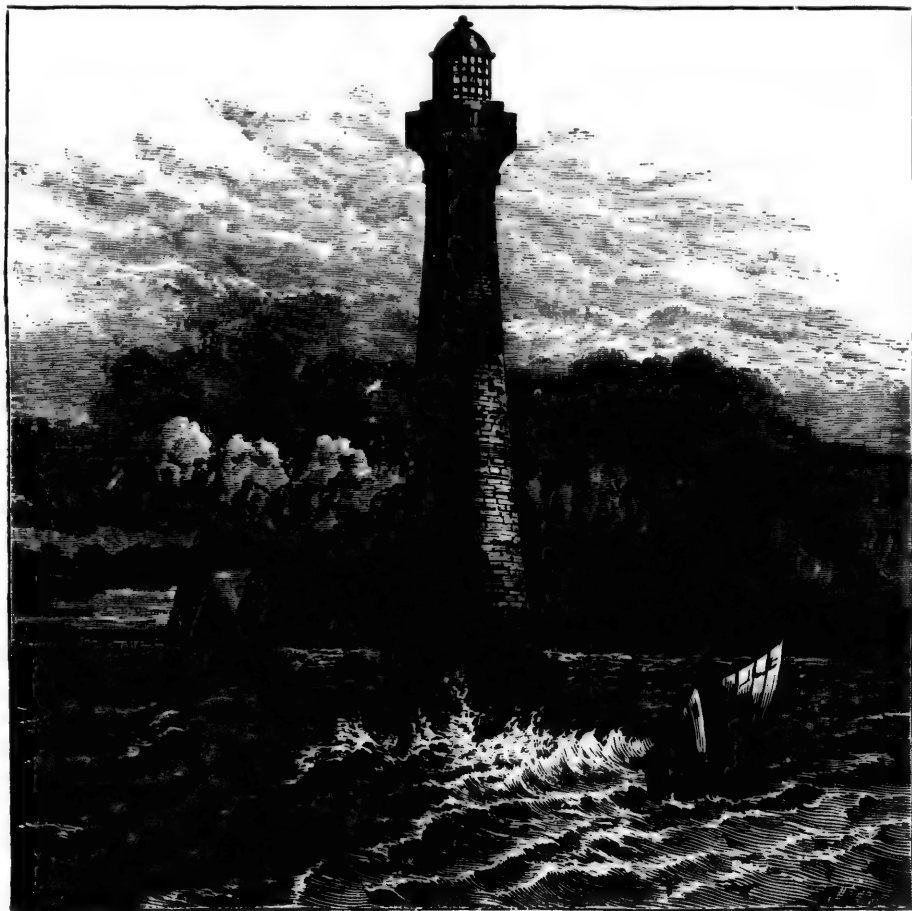
Yet life on the Skerryvore was by no means destitute of its peculiar pleasures. The grandeur of the ocean's rage, the deep murmur of the waves, the hoarse cry of the sea-birds, were varied by peaceful hours, when the sea was glassy and the deep blue vault of heaven was studded with a thousand stars. "Among the many wonders of the 'great deep,'" says Stevenson, "which we witnessed at the Skerryvore, not the least is the agility and power displayed by the unshapely seal. I have often seen half a dozen of these animals round the rock, playing on the surface or riding on the crests of curling waves, come so close as to permit us to see their eyes and head, and lead us to expect that they would be thrown *high and dry* at the foot of the tower; when suddenly they performed a somersault within a few feet of the rock, and diving into the flaky and wreathing foam, disappeared, and as suddenly re-appeared a hundred yards off, uttering a strange low cry.

On one occasion the tender could not come off to the poor people on the rock for seven weeks. The seamen passed a most dreary time. Their provisions and fuel were short; their clothes were worn to rags; and, what was to them of more importance still, they *were out of tobacco!*

One of the great difficulties experienced was landing the stones on the rock from the lighters, which, towed out by a steamer, were cast off as near the landing-place as possible and then towed in by boats. The landing service throughout the whole progress of the works was one of danger and anxiety, and many narrow escapes were made. On many occasions the men who steered the lighters ran great risks, and it was often found necessary to lash them to the rails, to prevent them being thrown overboard by the sudden bounds of the vessels, or being carried away by the weight of water which swept their decks as they were towed through a heavy sea. Sometimes they were forced, owing to the heavy seas which threatened to throw the vessels on the top of the rock, to draw out the lighters from the wharf without landing a single stone, after they had been towed through a stormy passage of thirteen miles. One day, during the very best part of the season, so sudden were the jerks of the vessel before the sea, that eight large warps, or cables, were snapped like threads, and the lighter was carried violently before a crested wave which rolled unexpectedly upon her. Those who stood on deck were thrown flat on their faces, and imagined that the vessel had been laid high and dry on the top of the rock. Yet, in spite of the short season and great difficulties of the work, no less than 120 lighters were towed out and discharged in the summer and autumn of 1841. During the progress of building the lighthouse, cranes and other materials were swept away by the waves, and daily risks were run in blasting the splintery gneiss, or by the falling of heavy bodies from the tower on the narrow space below, to which so many persons were necessarily confined. Yet no loss of life or limb occurred; and "our remarkable preservation was viewed," says Stevenson, "as in a peculiar manner the gracious work of Him by whom 'the very hairs of our head are all numbered.'"

The light was first exhibited on the 1st of February, 1844. It is a revolving apparatus,

and the light appears at its brightest state once in every minute. The lantern is no less than 150 feet above the sea, and its flashes may be seen from the deck of a vessel eighteen miles off. It is frequently seen from the high land of Barra, distant thirty-eight miles. The mass of stonework is double that of the Bell Rock Lighthouse, and five times that of



THE SKERRYVORE LIGHTHOUSE.

the Eddystone; it measures 58,580 cubic feet. The Skerryvore Light-tower was erected at a cost of £86,977 17s. 7d.

The eminent French naturalist, M. de Quatrefages, has given us an admirable description* of a visit paid by him to the lighthouse of Héhaux, on a rock near the Isles of Bréhat,

* *Vide* "The Rambles of a Naturalist on the Coasts of France, Spain, and Sicily."

off the coast of Brittany. He says, after some very beautiful remarks on the contemplation of nature, and its alleviation of the worst heart-sorrows: "Twilight often surprised me in the midst of my reveries, and often, too, the shades of night fell around me while I lay stretched beneath the star-bespangled deep azure canopy of heaven. I could then see another star shining in the far distance, which had been lighted by the hand of man. From the position I had chosen I could recognise the beacon-towers of Héhaux, of which the seamen of the islands had spoken to me with the liveliest expressions of enthusiasm, and which I had frequently watched by day as it stood out like a black line drawn along the whitish background of the sky. I would not leave Bréhat without visiting it. A few slight services had secured me the good-will of the officers of customs, who willingly consented to take me to Héhaux. Accordingly, one splendid day in October we left the harbour of La Corderie in a pinnace, manned by six sturdy seamen. The weather was splendid; not a cloud obscured the sky, which was reflected on the mirror-like surface of the ocean, whose depths it seemed to double. Impelled by the combined action of a light wind, which swelled out two small square sails, and of the rapid current imparted to the waters of Kerpont by the force of the tide, our pinnace shot across the waves as a sledge glides over the snow. Sometimes, indeed, we passed through a whirling eddy, which shook every part of our frail craft, and betrayed the vicinity of some submarine rock; but we soon regained the unruffled sea, and without having taken cognisance of the rapid rate at which we were moving, we saw Bréhat sink below the distant horizon behind us, whilst rock after rock and islet after islet seemed at every moment to emerge from the waves towards which we were advancing. . . . The nearer we drew to Héhaux the taller seemed the beacon-tower, which stood forth from the tower, with its lofty granite column and glass lantern, protected by that magical rod which is able to attract and safely conduct to earth the destructive force of the thunderbolt. We landed, and at once began our inspection of this colossal block, which has been upreared by the hand of man on the Epées de Tréguier, which, once the dread of the seaman, have become his protecting guides through the storms and darkness of night.

"The Héhaux Lighthouse would be regarded as a most remarkable monument even in our principal towns, but standing, as it does, alone in the midst of the ocean, it acquires by its very isolation a character of severe grandeur, which impresses the mind most powerfully. Figure to yourself a wall of granite, where the current and the storm do not even permit the hardiest ferns to take root, with here and there a twisted and deeply wave-worn mass projecting beyond the rest of the rocky ledge. It is here that the architect has laid the foundation of the tower. The base, which is of a conical form, is surmounted by a circular gallery. The lower portion curves gracefully outwards, spreading over the ground like the root of some colossal marine plant springing up from the foundation stones, which have been inserted far within the rock. On this base, which measures about twenty yards across, rises a column twenty-six feet in diameter, surmounted by a second gallery, whose supports and stone balustrades call to mind the portcullis and battlements of some feudal donjon. From the summit to the base this part of the edifice is composed of large blocks of whitish granite, arranged in regular strata, and carefully dovetailed into one another. As far as a third of the height of the building the rows of stones

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are bound together by granite joggles, which at the same time penetrate into the two superposed stones. The stones have been cut and arranged with such precision that there has been hardly any reason for using cement, which has only been employed in filling up a few imperceptible voids: and hence the lighthouse, from the base to the summit, seems to form one solid block, which is more homogeneous and probably more compact than the rocks which support it. The platform which crowns this magnificent column, at an elevation of more than 140 feet above high tide watermark, is surmounted by a stone cupola, at once solid and graceful, supported by pillars which are separated by large panes of glass. It is within this frame of glass that the beacon is lighted, which may be distinctly seen from every direction at a distance of twenty-seven miles.

"At low tide the sea leaves a space of several hundred square yards uncovered round the base of the edifice; at high tide it entirely surrounds it. It is then that the tower of Héhaux rises in its solemn isolation from the midst of the waves, as if it were a standard of defiance upraised by the genius of man against the demon of the tempest. At times one might almost fancy that the heavens and the sea, conscious of the outrage offered to them, were leagued together against the enemy, which seems to brave them by its imperturbability. The north-west wind roars round the tower, darkening its thick glass windows with torrents of rain and drifts of snow and hail. These impetuous blasts bear along with them from the far-spread ocean colossal waves, whose crests not unfrequently reach the first gallery, but these fluid masses slide away from the round and polished surfaces of the granite, which leave them no points of adhesion, and darting their long lines of foam above the cupola, they break with thundering roar against the rocks of Stallio-Bras or the boulders of Sillon. The tower supports these terrific assaults without injury, although it bends, as if in homage, before the might of its foes. I was assured by the keepers that during a violent storm the oil in the lamps of the highest rooms presents a variation of level exceeding an inch, which would lead us to assume that the summit of the tower describes an arc of about a yard in extent. This very flexibility seems, however, in itself a proof of durability. At all events, we meet with similar conditions in several monuments, which for ages have braved the inclemency of recurring seasons. The spire of Strasburg Cathedral, in particular, bends its long ogives and slender pinnacles beneath the force of the winds, while the cross on its summit oscillates at an elevation of more than 450 feet above the ground.

"To construct a monument on these rocks, which seemed the very focus of all the storms which raged on that part of our coasts, was like building an edifice in the open sea. Such a project must, indeed, have appeared at first sight almost impracticable. After their third season of labour, the workmen completed the foundations of the tower and fixed the key-stone of the cupola. In vain did difficulties of every kind combine with the winds and waves to oppose the work; human industry has come forth victorious from the struggle, and although a thousand difficulties and dangers beset the labourers, no serious accident to them or their work troubled the joy of their triumph. Only on one occasion was science at fault. In order to facilitate the arrival of the stones, which had to be brought from a distance of several leagues, and cut at Bréhat, the skilful engineer who had furnished all the plans and superintended their execution wished to construct

a wooden pier for the disembarkation of the stones at the spot where they were required. Several of the older seamen objected to the plan as impracticable, but M. Reynaud, who was not familiar with the sea, and who, moreover, was proud of having stemmed the current of rapid rivers, trusted to the stability of his massive piles, clamped together with iron and bronze. But he was soon compelled to admit his mistake. The first storm sufficed to scatter over the waters the whole of these ponderous and solid materials like so many pieces of straw. So a crane was attached to the summit of a rock, to which boats could be moored, and the materials for building were then drawn up to a railway which had been thrown over the precipice that separated this natural landing-place from the site of the tower.

"Now that we have admired the exterior of the lighthouse, follow me into the interior by the help of these steps, which have been formed by the insertion of bars of copper into the stone. Let us pause for a moment to admire the ponderous bronze doors which hermetically seal the entrance, before we plunge into those vaults which look as if they had been cut out of the solid rock. We are in the first storey, surrounded by stores of wood and ropes and workmen's tools. Above, we perceive cases of zinc, which, we are told, contain oil to feed the lamps and water for the use of the men employed in the building. In the third storey is the kitchen, with its pantry and larder, on a level with the first gallery. We need not enter the three apartments appropriated to the use of the men, for, beyond being very simple and clean, there is nothing to record concerning them. But we have now reached the seventh storey, and we must rest for a few moments in the little octagonal saloon, set apart for the engineers, when they come to inspect the condition of the lighthouse. Here, in the midst of the ocean, more than a hundred feet above the level of the sea, you will find the comfort and almost the elegance of a Parisian apartment.

"Let us now return to the spiral staircase which has brought us thus far, and which will carry us at once to the portion of the edifice which is more particularly destined to fulfil the special purpose for which the tower is designed. The eighth storey contains vessels of oil, glasses, revolving lamps, some admirable instruments intended for meteorological observations, a thermometer, barometer, and chronometer. Here the spiral staircase terminates in a flattened arch, which supports a slender pillar, cut into steps, which are the only means of communication with the watch-tower above, in which the men take it by turns to keep guard every night. You will be surprised on looking round to perceive that this apartment is coated with different coloured marbles, which line the walls and vaulted roof, and even cover the floor. But this luxury, which may appear to you so much out of place, has been introduced from necessity. The apparatus for lighting the building enters the room through a circular aperture in the ceiling, and hence the most extreme cleanliness becomes necessary, which could alone be obtained by the aid of perfectly polished surfaces."

The tenth and last flight of steps brings one beneath the cupola, and to the machinery by which a light of the first order is maintained.

CHAPTER XII.

THE LIGHTHOUSE (*concluded*).

Lighthouses on Sand—Literally screwed down—The Light on Maplin Sands—That of Port Fleetwood—Iron Lighthouses—The Lanterns themselves—Eddystone long illuminated with Tallow Candles—Coal Fires—Revolution caused by the invention of the Argand Burner—Improvements in Reflectors—The Electric Light at Sea—Flashing and Revolving Lights—Coloured Lights—Their Advantages and Disadvantages—Lanterns obscured by Moths, Bees, and Birds.

THE difficulties involved in constructing a lighthouse on solid rock have been shown, and it was at one time thought absolutely impossible to erect—with any prospect of permanent duration—one upon storm-exposed sands. *Nous avons changé tout cela.* It is no longer necessary to place floating lights in places of great danger, although for other reasons they are constantly used. One of the greatest modern triumphs of engineering is Mitchell's screw-mooring apparatus. To describe it fully would necessitate several pages of technical matter. Suffice it to say that enormous cast-iron screws, having hollow cylindrical centres, through which wrought-iron spindles pass, are literally screwed down into the sand, or its substratum of other soil. One of the earliest experiments was made on the verge of the Maplin Sand, at the mouth of the Thames. Nine of the mooring-screws were inserted into the sand $21\frac{1}{2}$ feet, one in the centre, the rest forming an octagon 42 feet in circumference, having standards or posts which stood 5 feet above the surface of the sand. A raft of timber was floated over the spot, and a capstan in its centre drove the screws to the required depth. This raft was afterwards sunk, by covering it with 200 tons of rough stone. Two years were allowed to elapse, at the termination of which time the whole mass was found firmly embedded, and then a lighthouse, raised on a strong open framework, was erected over this sub-structure. During these long preparations a very similar structure was commenced and finished at Port Fleetwood, on the River Wyre, near Lancaster.

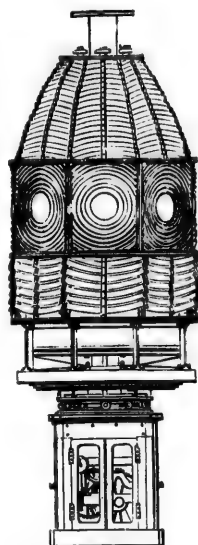
The preparatory steps were similar to those already described. The foundation of the lighthouse was formed of seven screw-piles, six of them occupying the angles of a hexagon 46 feet in diameter, the seventh being in the centre. From each screw proceeds a pile 15 feet in length, having at the upper end another screw for securing a wooden column. These columns are of Baltic timber, the one in the centre being 56 feet, the others 46 feet in length, firmly secured with iron hoops and coated with pitch. The platform, upon which the house stands, is 27 feet in diameter, the house itself being 20 feet in diameter and 9 feet high. From the summit of the house rises a twelve-sided lantern, 10 feet in diameter and 8 feet high. Altogether the light is elevated about 46 feet above low-water level, and ranges over an horizon of eight miles. The light is of the dioptric kind—bright, steady, and uniform, and when the weather is too foggy to allow it to be seen, a bell is tolled by machinery, to give the needful warning.

At the period when screw-pile lighthouses were being thus successfully erected, other and most valuable suggestions were being made for the building of bronze and cast-iron lighthouses. The great advantage of iron over stone and other materials in those portions of the building not actually in contact with sea-water soon became apparent. Upon a

given base a much larger internal capacity could be obtained; plates could be cast in large surfaces and with few joints, and a system of binding adopted which should ensure the perfect combination of every part. The comparatively small bulk and weight also of the component parts gave great facilities for the transport and rapid construction of such structures. The initial cast-iron lighthouse was designed by Mr. Gordon in 1840, and was cast and put together within three months from the date of the contract. It was then taken to pieces and shipped for Jamaica, on which island it now lights up Morant Point, a point of great danger. The Commissioners of the House of Assembly had applied to Mr. Gordon to supply a suitable lighthouse at the smallest possible cost, and in furnishing them with the structure of cast-iron he fulfilled their wishes admirably, the expense not exceeding one-third of the cost of a similar building in stone. This elegant lighthouse, the outline of which resembles that of the Celtic towers of Ireland, was exhibited to visitors while it stood complete in the contractor's premises. The diameter of the tower is 18 feet 6 inches at the base, diminishing to 11 feet under the cap. The tower is formed of nine tiers of iron plates, each tier being 10 feet high and about three-quarters of an inch thick. At the base of the structure eleven plates are required to form the circumference, at the top nine plates; they are cast with a flange around their inner edges, and when put together these flanges form the joints, which are fastened together with nut-and-screw bolts and caulked with iron cement. The interior of the tower, to the height of 27 feet, was to be filled up with masonry and concrete of the weight of 300 tons; the remainder is divided into store-rooms and berths for the attendants. The tower is finished by an iron railing, within which rises the light-room, also of cast-iron, with windows of plate-glass. A copper roof and a short lightning-rod complete the whole. The Admiralty notice announced the exhibition of this light on Morant Point November 1st, 1842, and stated that the elevation of the light is 97 feet above the level of the sea, and that in clear weather it is visible at a distance of twenty-one miles. The light is of the revolving kind, consisting of fifteen Argand lamps and reflectors, five in each side of an equilateral triangle, and so placed as to produce a continuous light, but with periodical flashes. The tower is painted white, and the lower portion is coated with coal-tar to preserve it from rust. It rests on a granite base, and is also cased with granite near the foundation, the more certainly to prevent the action of the sea-water on the metal.

While the engineer had attained some of his greatest triumphs in the construction of lighthouses, the optician had not once directed his attention to the invention of a brilliant light, worthy to be placed upon the structure which proudly rose high above the fierce waves with the strength and solidity of a rock. During a period of forty years after the completion of the Eddystone tower by Smeaton, the lantern was illuminated by tallow candles stuck in hoops, just as a stand or booth is lighted at a country fair, and so lately as the year 1811 it was lighted with twenty-four wax candles. In 1812 the Lizard Light was maintained with coal fires; and in 1816, when the Isle of May Light, in the Frith of Forth, was taken possession of by the Commissioners of the Northern Lighthouses, a coal fire was exhibited in a *chauffer*—a description of light which had been exhibited for 181 years. In 1801 the light at Harwich, in addition to the coal fire, had a *flat* plate of

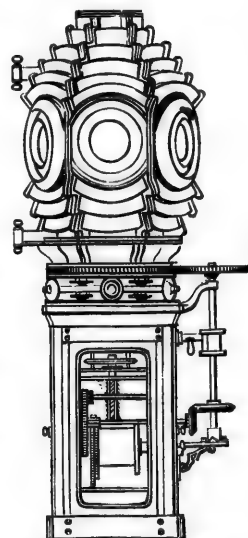
rough brass on the landward side, to serve as a reflector. Such methods of lighting were of course very deficient in power, and did not enable the mariner to distinguish one light from another—a point which is often of as much importance as the brilliancy of the light itself. Prior to the invention of the Argand lamp (about 1784) the production of a strong and brilliant light from a single source was scarcely possible, and even such a lamp, by its unassisted powers, would not be of very great value in giving early notice to the mariner of his approach to the coast, which ought to be the primary object of a



HOLOPHOTAL REVOLVING LIGHT.
(FIRST ORDER.)



FLOATING LIGHT LANTERN.



HOLOPHOTAL REVOLVING LIGHT.
(FOURTH ORDER.)

REVOLVING LIGHT APPARATUS.

(From Drawings supplied by Messrs. W. Wilkins & Co.)

lighthouse. As the rays of a luminous body proceed in all directions in straight lines, it is obvious that in the case of a single lamp the mariner would derive benefit only from that small portion of light which proceeded from the centre of the flame to his eye. The other rays would proceed to other parts of the horizon, or escape upwards to the sky, or downwards to the earth, and thus be of no value to him. By increasing the number of burners a small portion of light from each burner would slightly increase the effective action, but by far the greater portion of the light produced would escape uselessly above and below the horizon and also at the back of each flame. Next, these defects were remedied, and the efficiency of the light greatly increased, by placing behind each lamp a reflector of such a form as to collect the rays that would otherwise be lost, and throw them forward to the horizon. The adoption of such a method has led to what is called the catoptric system of lights.

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Alan Stevenson states that the earliest notice he has been able to find of the application of paraboloidal mirrors to lighthouses is in a work on "Practical Seamanship" (Liverpool, 1791), by Mr. William Hutchinson, who notices the erection of the four lights at Bidstone and Hoylake for the entrance of the Mersey, in 1763, and describes large paraboloidal moulds of wood lined with mirror glass and smaller ones of polished tin-plate, as in use in those lighthouses. In France M. Toulère, a Member of the Royal Corps of Engineers of Bridges and Roads, is regarded as the inventor of the catoptric system of lights. In a memoir dated 26th June, 1783, he is said to have proposed for the Cordouan Lighthouse a combination of paraboloidal reflectors with Argand lamps, arranged on a revolving frame, a plan which was actually carried into execution, under the direction of the Chevalier Borda.* The plan was so successful that it was soon adopted in England by the Trinity House of London; and in Scotland the first work of the Northern Lights Board, in 1787, was to light a lantern on the Old Castle of Kinnaird Head, in Aberdeenshire, by means of parabolic reflectors and lamps. These reflectors were formed of facets of mirror-glass placed in hollow paraboloidal moulds of plaster. The more complicated arrangement of lenses placed round a centre in concentric circles is due to the great Fresnel, a practical man of science, whose abilities are acknowledged as fully in England as in France.

The oil used in the lighthouses of the United Kingdom has generally been sperm. Colza, the expressed oil of the wild cabbage (*Brassica oleracea*), was very generally used in France, and occasionally in Great Britain. Gas is used in a few places, where its application is easy. There can hardly be any doubt now, however, that the coming light will be the electric, since its steady production is becoming a matter of scientific certainty. As early as 1857 Professor Holmes submitted to the Trinity House a method of employing this light, which was submitted to Faraday, and approved. The Board then allowed a trial at the South Foreland Lighthouse. The light was first displayed on the 8th of December, 1858. In June, 1862, it was permanently fixed at Dungeness. In Faraday's Report to the Trinity House, published in 1862, he says: "Arrangements were made on shore by which observations could be made at sea, about five miles off, on the relative light of the electric lamp and the metallic reflectors with their Argand oil-lamps, for either could be shown alone, or both together. At the given distance the eye could not separate the two lights, but by the telescope they were distinguishable. The combined effect was a glorious light up to five miles; then, if the electric light was extinguished, there was a great falling off in the effect, though, after a few moments' rest to the eye, it was seen that the oil-lamps and reflectors were in their good and proper state. On the other hand, when the electric light was restored, the glory rose to its first high condition. . . . During the day-time I compared the intensity of the light with that of the sun, and both looked at through dark glasses. Its light was as bright as that of the sun, but the sun was not at its brightest."

The number of lights on a well-frequented coast being considerable, it is of the utmost importance to arrange them so as to enable the mariner easily to distinguish

* M. Quatrefages de Bréau, the distinguished French naturalist and philosopher, says that the revolving apparatus was partially due to M. Lemoine, a citizen, and at one time Mayor, of Calais.

them from each other. Catoptric lights admit of nine separate distinctions :—1, fixed ; 2, revolving white ; 3, revolving red and white ; 4, revolving red with two whites ; 5, revolving white with two reds ; 6, flashing ; 7, intermittent ; 8, double fixed lights ; 9, double revolving white lights. Mr. Stevenson thus defines their distinctive features :—“The first exhibits a steady and uniform appearance which is not subject to any change, and the reflectors used for it are of smaller dimensions than those employed in revolving lights. This is necessary in order to permit them to be ranged round the circular frame, with their axes inclined at such an angle as shall enable them to illuminate every point of the horizon. The *revolving* light is produced by the revolution of a frame with three or four sides, having reflectors of a larger size grouped on each side with their axes parallel, and as the revolution exhibits once in two minutes or once in a minute, as may be required, a light gradually increasing to full strength and in the same gradual manner decreasing to total darkness, its appearance is extremely well marked. The succession of red and white lights is produced by the revolution of a frame whose different sides present red and white lights, and these afford three separate distinctions, namely, alternate red and white, the succession of two white lights after one red, and the succession of two red lights after one white light. The *flashing* light is produced in the same manner as the revolving light ; but, owing to a different construction of the frame, the reflectors on each of eight sides are arranged with their rims or faces in one vertical plane, and their axes in a line inclined to the perpendicular. A disposition of the mirrors, which, together with the greater quickness of the revolutions, which shows a flash once in five seconds of time, produces a very striking effect, totally different from that of a revolving light, and presenting the appearance of the flash alternately rising and sinking, the brightest and darkest periods being but momentary ; this light is further characterised by a rapid succession of bright flashes, from which it gets its name. The *intermittent* light is distinguished by bursting suddenly into view and continuing steady for a short time, after which it is suddenly eclipsed for half a minute. Its striking appearance is produced by the perpendicular motion of circular shades in front of the reflectors, by which the light is alternately hid and displayed. This distinction, as well as that called the flashing light, is peculiar to the Scotch coast. The double lights (which are seldom used except where there is a necessity for a *leading* line, as a guide for taking some channel or avoiding some danger) are generally exhibited from two towers, one of which is higher than the other. At the Gulf of Man a striking variety has been introduced into the character of leading lights, by substituting for two fixed lights two lights which revolve in the same periods and exhibit their flashes at the same instant ; and these lights are of course susceptible of the other variety enumerated above, that of two revolving red and white lights, or flashing lights, coming into view at equal intervals of time. The utility of all these distinctions is to be valued with reference to their property of at once striking the eye of an observer and being instantaneously obvious to strangers. The introduction of colour as a source of distinction is necessary in order to obtain a sufficient number of distinctions ; but it is in itself an evil of no small magnitude, as the effect is produced by interposing coloured media between the burner and the observer's eye, and much light is thus lost by the absorption of those rays which are held back in order to cause

the appearance which is desired. Trial has been made of various colours, but red, blue, and green alone have been found useful, and the two latter only at distances so short as to render them altogether unfit for sea-lights. Owing to the depth of tint which is required to produce a marked effect, the red shades generally used absorb from four-sevenths to five-sixths of the whole light—an enormous loss, and sufficient to discourage the adoption of that mode of distinction in every situation where it can possibly be avoided. The red glass used in France absorbs only four-sevenths of the light, but its colour produces, as might be expected, a much less marked distinction to the seaman's eye. In the lighthouses of Scotland a simple and convenient arrangement exists for colouring the lights, which consists in using chimneys of red glass, instead of placing large discs in front of the reflectors."

The construction of the lantern is a point of importance; and one of the first order will cost about £1,260. On the level of the top of the lower glass a narrow gangway is usually built for the keeper to stand upon in order to clean the panes, an operation which in snowy weather may have to be frequently repeated during the night. At some of the lighthouses on the Mediterranean the lantern is at certain seasons so completely covered with moths as to obscure the light and to require the attendance of men with brooms. Mr. Tomlinson was informed by the keepers at the Eddystone that bees and other insects were much attracted by the light, and collected round the lantern in great numbers. Larks and other birds flew against it, and, becoming stunned with the blow, were picked up on the balcony and were cooked by the men for breakfast. The lantern is very liable to injury in high winds, or the glass may be broken by large sea-birds coming against it on a stormy night, or by small stones violently driven against it by the wind. Extra plates of glass are always kept to take the place of broken panes. The number of light-keepers employed varies, ranging from two to four, and in the latter case one is usually allowed to remain on shore, the men taking the privilege in turns. When the situation admits, it is usual to have the keeper's rooms in a building outside the lighthouse to avoid dust, which is most injurious to the delicate apparatus of the light-room. Great cleanliness is enforced in all that belongs to a lighthouse, the reflectors and lenses being constantly burnished, polished, and cleansed.

And so we have traced the history and progress of lighthouses, and it is hard to believe that any great change can be advantageously made in their construction, though their mode of illumination will doubtless be greatly improved. As we have seen, the electric light was used practically in a lighthouse long before it was in the streets of the great metropolis, and not in a merely experimental way, but with the most successful results.



BREAKWATER AT VENICE.

CHAPTER XIII.

THE BREAKWATER.

Breakwaters, Ancient and Modern—Origin and History of that at Cherbourg—Stones Sunk in Wooden Cones—Partial Failure of the Plan—Millions of Tons dropped to the Bottom—The Breakwater Temporarily Abandoned—Completed by Napoleon III.—A Port Bristling with Guns—Rennie's Plymouth Breakwater—Ingenious Mode of Depositing the Stones—Lessons of the Sea—The Waves the Best Workmen—Completion of the Work—Grand Double Breakwater at Portland—The English Cherbourg—A Magnificent Piece of Engineering—Utilisation of Otherwise Worthless Stone—900 Convicts at Work—The Great Fortifications—The Verne—Gibraltar at Home—A Gigantic Fosse—Portland almost Impregnable—Breakwaters Elsewhere.

A BREAKWATER, we are told on the highest authority, is an obstruction of wood, stone, or other material, as a boom or raft of wood, sunken vessels, &c., placed before the entrance of a port or harbour, or any projection from the land into the sea, as a mole, pier, or jetty, so situated as to break the force of the waves and prevent damage to shipping lying at anchor within them. Thus the piers of the ancient Piræus and of Rhodes; the moles of Venice, Naples, Genoa, and Castellamare; the piers of Ramsgate, Margate, Folkestone, Howth, and the famous wooden dike thrown across the port of Rochelle. The term, of late years, has been almost exclusively applied to insulated dikes of stone. Of this description of dike for creating an artificial harbour on a grand scale, Cherbourg, Plymouth, and Portland present leading examples. The former, already mentioned in this work, claims our attention.

The French, happily our good friends to-day, were not always so, and there was a period when the splendid natural harbours, bays, and roadsteads of this country were a source of annoyance to them. While nature had been more than kind to us, their coast presented a series of sandy shores, intermingled with iron-bound coasts, bristling with rocks. De Vauban, the great engineer, was employed by Louis, the *Grand Monarque*, to inspect the Channel shores of France, and his natural sagacity and great knowledge

caused him at once to select Cherbourg as one of the best points for forming an artificial harbour, protected by suitable fortifications. Other engineers recommended the same port, and one, M. de la Bretonnière, proposed that a number of old ships should be loaded with stones and sunk, while a large quantity of stone should be also thrown around them to form a grand breakwater, which should rise fifty feet from the bottom. This idea was abandoned, as it appears, partly from the fact that France had not old vessels enough to spare for the purpose, and that it would cost too much to purchase them from foreign nations.

In 1781 an eminent French engineer proposed that, instead of one continuous breakwater, a number of large masses or congregations of stones, separated from each other on the surfaces but touching at the bases, should be built on the sea bottom, believing that they would break the force of the waves almost equally well. As a part of his plan he suggested that they should be sunk in large conical *caissons* of wood, 150 feet in diameter at the base and sixty feet broad at the top. These wooden cones were practically to bind and keep the stones together. They were to be floated to the site with a number of empty casks attached as floats, then detached, filled with stones, and sunk. An experiment at Havre having been considered satisfactory, the Government accepted the idea, and ordered that operations should be immediately commenced at Cherbourg. A permanent council was appointed, as were officers and engineers. In 1783 barracks and a navy-yard were built, and at Becquet, a short distance from Cherbourg, an artificial harbour, capable of holding eighty small vessels for the transport of the stone, was literally dug out.

On June 6th, 1784, the first cone was floated to its destination, and a month later a second was similarly conveyed, in the presence of 10,000 spectators. Before the latter could be filled with stones a storm, which lasted five days, half demolished it. In the course of the summer and autumn not less than 65,000 tons of stone were deposited in and around the cones. In 1785 several more cones were completed and sunk; at the end of the year the quantity of stone deposited amounted to a quarter of a million tons, and at the end of 1787 a million tons. At the end of 1790, when the works had been seven years in progress and the Government was getting very tired of the whole matter, between five and six million tons of stone had been dropped into the sea. M. de Cessart, the engineer, found that, in order to sink five cones per annum, he had to employ 250 carpenters, 30 blacksmiths, 200 stone-hewers, and 200 masons.

One could hardly expect much permanency from a wooden covering sunk into the sea, and it is not surprising that, one by one, they burst, few lasting more than a year. The outbreak of the Revolution put an end, for some time, to the operations at Cherbourg.

When the construction of the Cherbourg breakwater was resumed, the wooden cone system was abandoned, and the stone was simply sunk from vessels of peculiar construction. The breakwater was completed under Napoleon III., at a cost exceeding two and a half million pounds sterling. The actual breakwater itself was finished in 1853,* but since

* It was exposed twice to terrific storms during its construction. In 1808 the battery was submerged, the parapet upset, and the barracks and garrison, with sixty men, swept away. But the large blocks of stone were afterwards found to be more securely stowed than they had been before.

that time most important fortifications have been constructed on the upper works. This is the greatest breakwater in the world, its length being nearly two and a half miles; it is 300 feet wide at the base and 31 at the top. The water-space shut in and protected is about 2,000 acres, much of this great area being, however, too shallow for very large vessels.

Taken in connection with the fortifications, this breakwater has a value greater than any other in the world. At the apex of the angle formed by the junction of the two branches of the breakwater there is a grand fort, and it bristles generally with batteries and forts, as indeed does Cherbourg generally. Dr. W. H. Russell wrote of it, in our leading journal in 1860 that, "Wherever you look you fancy that on the spot you occupy are specially pointed dozens of the dull black eyes from their rigid lids of stone." With its twenty-four regular forts and redoubts, not including those on the mole, floating harbours, building slips, navy-yards, arsenals, and barracks, Cherbourg is a most formidable place.

In England Rennie's great Plymouth breakwater is the most remarkable specimen, among many others. Its dimensions are not as great as that of Cherbourg, but it was, nevertheless, a vast undertaking. It consists of an immense number of blocks of stone thrown into the Sound, and forms a barrier nearly a mile in length above the surface of the water. This grand work was commenced in 1812, and by the end of the second year about 800 yards of the breakwater began to appear at low water, and the swell was so much broken that ships of all sizes began to take shelter behind it; while the fishermen within its shelter could not judge accurately of the weather outside the Sound, so great was the change. Several limestone quarries near the Catwater were purchased of the Duke of Bedford for £10,000, and some fifteen vessels were constantly employed in removing the blocks, which ranged in weight from one to ten tons. These vessels were of ingenious construction; they had two railways laid along them parallel to each other, with openings in the stern to admit the cars or trucks laden with stones. These were wheeled from the quarry to the quay, and so on to the vessels, till the lines of rails were filled with trucks. The vessels then proceeded to the works, each bearing its load of stone-laden trucks. On reaching the breakwater each truck was wheeled to the opening, and the stones tipped into the sea. During the first five years the amount of stone deposited gradually rose from 16,000 to 300,000 tons per annum. The large masses were first lowered, and then smaller stones, quarry rubbish, &c., to fill up the interstices. The structure was completed in 1841, with the use of 3,670,444 tons of stone* and at a cost of something like a million and a half of money. A distinguished French engineer, M. Dupin, who visited the works during their progress, describes in glowing terms the admirable arrangements, the order and regularity visible in all the proceedings. "Those enormous masses of stone," he remarks, "which the quarrymen strike with heavy strokes of their hammers; and those aerial roads of flying bridges, which serve for the removal of the superstratum of earth; those lines of cranes, all at work at the same moment; the trucks, all in motion; the arrival, the loading, and the departure of the vessels, all this forms one of the most imposing

* "An amount of material," says a well-known authority, "at least equal to that contained in the Great Pyramid."

sights that can strike a friend to the great works of art. At fixed hours the sound of a bell is heard, in order to announce the blasting of the quarry. The operations instantly cease on all sides; all becomes silence and solitude. This universal silence renders still more imposing the noise of the explosion, the splitting of the rocks, their ponderous fall, and the prolonged sound of the echoes."

"The waves," said Rennie, "were the best workmen" in the construction of a breakwater of rough stones, and on the whole his belief was confirmed, for the storms by which his great work was assailed rather helped than hindered it, by showing the most desirable slope on the sea-side, while comparatively little damage was done. The slope of the stone barrier was, however, by their force changed very greatly. An inclination of three to one was altered to about five to one, and Rennie had recommended that the authorities should take a lesson from nature and finish the breakwater according to her teachings. "It would appear," says Mr. Smiles,* "that Mr. Whidbey, the resident engineer, contrived to finish most of the exterior face at a slope of only three to one, as before; and that it stood without any material interruption until several years after Mr. Rennie's death. By that time nearly the whole of the intended rubble, amounting to 2,381,321 tons, had been deposited, and the main arm, with 200 yards of the west arm, making 1,241 yards in length, had been raised to the required level. The work had arrived at that stage when it had to experience the full force of another terrific storm, which took place on the 23rd of November, 1824. It blew at first from the south-south-east and then veered round to the south-west, and the effect of this concurrence of winds was to heap together the waters of the Channel between Bolt Head and Lizard Point, and drive them, with terrific force, into the narrow inlet of Plymouth Sound. This storm was not only greatly more violent, but of much longer duration than that of 1817. When the breakwater could be examined it was found that out of the 1,241 yards of the upper part, which had been completed with a slope of three to one, 796 yards had been altered as in the previous storm, and the immense blocks of stone which formed the sea-face of the work had, by the force of the waves, been rolled over to the landward sides thus reducing the sea-slope, as before, to about five to one. The accuracy of Mr. Rennie's view as to the proper slope—which was indicated by the action of the sea itself—was thus a second time confirmed;" and a board of eminent engineers reporting in accordance, the work was so finished. When the action of the sea had formed its own slope and had wedged together and settled the great mass of materials which form the breakwater, and when no further movement was apparent, but the whole appeared consolidated together, then the slope towards the sea was cased with regular courses of masonry, dove-tailed and cramped together, the diving-bell being brought into requisition for placing the lower courses. A lighthouse has been erected on its western extremity, and the work may be regarded as a magnificent success, worthy of a great maritime nation.

A third leading illustration of a magnificent breakwater is afforded at Portland, and it is deserving of particular mention inasmuch as all authorities agree that it was constructed with little or no waste of the public money. "In the mind of the inquiring tax-payer,"

* "Lives of the Engineers."

said our leading journal,* "breakwaters are always associated with millions of money thrown broadcast into the sea, in out-of-the-way bays and inlets, which even without these obstacles to make them more dangerous, the most distressed mariner would be particularly careful to avoid;" and the writer goes on to mention several which either ought not to have been attempted, or where extravagant expenditure has been incurred. "In such a woeful list of hideous failure and costly mismanagement, it is a comfort to perceive that the long lane begins to turn at last, and that from our now having one good standard to go by, we may hope for better things for the future. Portland breakwater is a really grand



CHERBOURG, FROM THE SEA.

and magnificent work, and one of which the nation may well be proud if it is inclined to let bygones be bygones, and forget the many successive failures before it was able to attain so much." Portland breakwater is the right construction in the right place, and before its erection the Roads afforded doubtful shelter to vessels in distress. One advantage it enjoys, that of possessing a splendid anchorage of stiff blue clay, and being free from rock or shoal from the island of Portland itself up to the very esplanade of Weymouth. There, too, was the stone on the very spot; steep and rugged heights for fortifications, a noble harbour for shipping, and rail communication with all parts. But all these advantages might have been ignored but for the formidable nature of the works constructed at Cherbourg. The port itself is about five hours' steaming from the French Cronstadt it was designed, *en route*, to keep an eye upon. So, in 1844, the commissioners recommended that it should

* The Times, September 14th, 1861.

be made a grand fortified naval station. In 1847 an Act was passed authorising the construction of a breakwater, and in 1849 the foundation-stone was laid by the Prince Consort.

Nature has provided, in the mighty bank known as the Chesil Beach, practically a great shingle embankment, protection to Portland Harbour on the west and south-west, and the object of the breakwater was to secure, by engineering art, a similar protection to the bay on the south-east side. The Chesil Bank, though now and for long perfectly impregnable to the tremendous rollers of the south-westerly gales, was not always so, and as late as the



PORTLAND.

reign of Henry VIII. great breaches had been temporarily effected by the power of the sea. Still it affords a splendid protection, as does now the mighty double breakwater designed by Rendel, and brought to completion by Coode. The breakwater leaves the shore at the north-eastern extremity of the island, and runs out due east to a distance of 600 yards. "This inner limb alone," wrote an authority in engineering,* "is a splendid achievement of human labour and skill. It has been top-finished by a grand superstructure of hewn granite, and ends in a circular head, which has been completed as a fort and mounts eight guns. The foundations of this massive bastion have been most carefully planned, with especial reference to the safe passage of the largest vessels through the 400 feet gap which the fort flanks on one side. The masonry is continued in a perpendicular line to a point 25 feet

* Horace Moule in Weldon's "Register of Facts and Occurrences relating to Literature, the Sciences, and the Arts," December, 1862.

below the lowest water-line of spring-tides. A ship of the line, as is well-known, draws at the utmost 24 feet. An extra foot of perpendicular masonry, therefore, having been allowed, the lower masses of the fort begin to slant outwards, and continue to do so till they reach the firm clay bottom. This lower portion consists of a well-consolidated mass of unhewn stone. The outer, and by far the longer limb, of the breakwater begins to bend away to a point very near due north shortly after leaving the gap, the further side of which is also flanked by a circular head. . . . The whole of this vast outer limb, with the exception of the circular head at its inner extremity and a fort at the other end, consists of nothing more than a stupendous bank of rough unhewn stones of all shapes and sizes, tumbled out of the wagons on the timber staging above. Divers, constantly employed, have effectually prevented the chance of any holes being left in the rising mass, and have been able to indicate the precise spot over which a given number of loads were required to be 'tipped.' The security of the bank is further guaranteed by its enormous width at the base; and although the waves have already rounded many a giant block below the water-line and made it look as if its present place had been its abode ever since the Creation, yet this polishing and grinding is the extent of the effect which they will be able to produce upon a work probably destined to hold its own as long as Portland itself."

The rapidity with which the breakwater was constructed reflected great credit on Mr. Coode. The actual routine of the construction followed, when the line for the structure had been sounded and carefully marked out, was to commence piling for the railway that was to carry the long trains of wagons filled with the stone; and when a short piece of this was completed, to go on "tipping in" the rubble and rough stone till they made their appearance above water at last; then the piling was carried forward a few yards more, and the process repeated, and so on by successive stages to the completion of the work. All appears very simple on paper until we learn that it had to be accomplished through eleven fathoms of rough tumbling waves. One night's rough weather often swept away the timber-work that cost many thousands of pounds, and many months of labour to construct and fix in its position in the sea. The piling that had to resist the action of a deep and heavy sea, and to carry also, at a height of 90 feet, a railway for the heaviest traffic, required to be something more than a common framework of timber. Every log used had to be first of all saturated to its very centre with creosote, and this was done in a most ingenious manner. A great boiler, 100 feet long and 7 feet in diameter, was filled with the largest and finest logs procurable; the mouth being closed with a solid air-tight cover, the air was pumped out, not only from the tube, but from the very pores of the wood itself. When the vacuum was as complete as possible, the creosote was admitted from tanks at the bottom and forced into the timber by hydraulic power of about 300 lbs. to the square inch. In this the logs remained for two or three days, by which time the creosote was forced into the fibre of the wood. Several of the logs thus prepared were bolted and bound together, till one huge spar 90 feet long, and eight or nine tons in weight, was formed. Then an iron "Mitchell" screw—as used in the lighthouses built on sands, already described—was affixed at the lower end, and the whole sunk till it rested on the bottom, when it was worked round by a capstan till it was firmly screwed into the clay. Thus secured, they were tolerably safe, though single heavy waves would uproot piles and moorings together, to obviate which

two or three piles were generally set at the same time, and well bound together by powerful cross timbers.

The stone quarried for the breakwater from the very top of Portland Island was largely excavated and brought to the spot by convict labour. The stone itself used was unfit for architectural purposes, but quite suitable for the breakwater. The convict prison, also on the top of the island, was virtually the barracks for 900 labourers, who were more profitably employed than in walking a treadmill or picking oakum. The quarries were some 400 or 500 feet above the level of the breakwater, and the stone was conveyed to it by three inclines of broad double gauge rails. The trains of trucks or wagons were worked up and down with a wire rope over a drum, the weight of the loaded descending wagons winding the empty ones up again to the quarries. A powerful locomotive pushed the loaded trains to the end of the work, where the stone was tipped into the sea, as much as 3,000 tons a day having been sunk at Portland. The total amount so committed to the deep was about 5,360,000 tons, and the area protected by the breakwater would accommodate sixty of the very largest men-of-war, and almost any number of smaller vessels.

"During the progress of the works," wrote Mr. Moule, "the engineer has from time to time instituted some highly interesting investigations into the structure of the Chesil Bank. . . . During a single night's gale, between three and four *millions of tons* weight of pebbles have been found to be swept away into the gulfs of the Atlantic, being gradually thrown back again in the three or four following days. The size of the pebbles had long been observed to vary greatly at the two opposite ends of the beach. At the western, or Abbotsbury end, they are exceedingly small, more resembling gravel than shingle. At the Portland end it is not uncommon to meet with them several inches in diameter, and several pounds in weight. This phenomenon has been explained by the very probable assumption that the pebbles are driven eastward by the wind-waves, and not moved by the slow and (for purposes like this) powerless tidal current. The larger pebbles, presenting a broad surface to the waves, are easily rolled forward, while the smaller ones are passed by, offering a less surface, and becoming more easily imbedded in the sand." It is said that a practised smuggler on that coast could tell his whereabouts on the bank in the darkest night or thickest fog, by feeling the size of the pebbles on which he stood. And smugglers and "wreckers" were once very numerous among the Portlanders. In these better days their courage and great personal strength has saved many a life and ship endangered off the bank.

An old and popular song says that—

"Britannia needs no bulwarks,
No towers along the steep,"

but recent legislators have evidently not been so thoroughly satisfied of the fact, or they would not have authorised the construction of the great fortifications at Portland, which make it almost the Gibraltar of the Channel. The splendid breakwater there did not need protection. All the battering it is ever likely to get could not injure it seriously, and whatever ruins Macaulay's New Zealander may stand upon, they are not likely to be those of a great breakwater, each year of the existence of which renders it generally more compact. But it was for good reasons that the extensive works of Portland were undertaken. "We," said the *Times*, "of

all people in the world, who so toiled and suffered, lavishing blood and treasure under the walls of Sebastopol, should be the last to underrate the importance of a good fortification as a check to an invading army." The reader will hardly require any defence of such policy, for naval arsenals contain the very germ of our power, as the iron safe of the prudent man contains his valuables.

The Bill of Portland greatly resembles the situation of Gibraltar. There are the same bold, steep, rocky headlands; the breakwater stands in place of the Mole, and Chesil Bank connects it with the mainland, as the neutral ground does our great Mediterranean citadel with Spanish soil. "Its height, its isolation, and the harbour it commands, all pointed it out as a place for an impregnable—we had almost said an inaccessible—fortress. To the late Prince Consort is due the credit of having seen its vast importance in this respect, as it was also owing to



HOLYHEAD BREAKWATER.

his enlightened judgment that the breakwater was begun at last, and he himself laid the foundation-stone. Portland is rising, as we have said, into a first-class fortress, of which the Verne is the great key or citadel." So spoke the *Times*, in 1863; and now Portland is the best fortified port and naval station in the kingdom.

The Verne is a height which, like La Roche at Cherbourg, dominates over all around it for miles, especially on the side which overlooks the breakwater and the sea. On the north side it is protected by nearly perpendicular cliffs; elsewhere it is fully protected by art. One of its greatest defences is the dry ditch which completely encircles the whole work, except on the north side just mentioned, where it is both unnecessary and impossible. This ditch is one of the greatest ever undertaken in ancient or modern days. Its depth is 80 feet, and its width 100, and in some places 200 feet; its length is nearly a mile, and its floor is 368 feet up the hill-side. Nearly two million tons of stone had to be blasted to form it; and it would never have been excavated on the colossal scale indicated, but that all the said stone was utilised in building the breakwater. With this tremendous artificial ravine to

cross, with fortifications and bastions fully prepared with heavy Armstrong ordnance towering above, what enemy is ever likely to attack the citadel of the Verne? Our leading journal spoke of it as more compact than Cherbourg, Cronstadt, or Sebastopol, while it is more than three times their elevation above the sea.

utting out from the main fortress are two bastionettes, one of which has eight faces, mounting guns on each so as to sweep with a murderous fire two-thirds of the whole length of the fosse or ditch. The other is nearly as formidable, and both are pierced with loop-holes in all directions for the fire of riflemen. The great barracks in the enclosure of the Verne can, at a pinch, accommodate 10,000 men, the peace garrison being about a third of that number. The arrangements for water supply are perfect, great reserve tanks having been cut from the solid rock, and covered with shot-proof roofs. These are kept full, and, protected from air and light, the water is always sweet. Portland bristles with batteries; but the Verne commands everything in range of cannon, inside or outside the breakwater, including all parts of the island, and can cross fire with other important forts. It is probably the strongest fortified harbour in the world.

Other and important breakwaters, like that of Holyhead, which cost a couple of million sterling, and which is generally cited as an example of much money thrown into the sea; Alderney, which has swallowed up close on three-fourths of the above sum; and Dover, which has a fine *vertical* sea-wall, might be mentioned. Enough has been said to show the general importance of the subject to a maritime people, and that, on the whole, England has been fully alive to the fact. Indeed, counting large and small breakwaters and sea-walls, more has been expended in this country for these works than in any two or three foreign countries possessing sea-boards.

CHAPTER XIV.

THE GREATEST STORM IN ENGLISH HISTORY.

The Dangers of the Seas—England's Interest in the Matter—The Shipping and Docks of London and Liverpool—The Goodwin Sands and their History—The "Hovellers"—The Great Gale of 1703—Defoe's Graphic Account—Thirteen Vessels of the Royal Navy Lost—Accounts of Eye-witnesses—The Storm Universal over England—Great Damage and Loss of Life at Bristol—Plymouth—Portsmouth—Vessels Driven to Holland—At the Spurn Light—Inhumanity of Deal Townsmen—A worthy Mayor Saves 200 Lives—The Damage in the Thames—Vessels Drifting in all Directions—800 Boats Lost—Loss of Life on the River—On Shore—Remarkable Escapes and Casualties—London in a Condition of Wreck—Great Damage to Churches—A Bishop and his Lady Killed—A Remarkable Water-Spout—Total Losses Fearful.

"The dangers of the seas" are little enough to some countries, but to England they mean much indeed. Think of the maritime interests of the port of London, the docks of which cover considerably over 300 acres of water-space, and to which 7,000 or more vessels enter annually. Over 100 vessels, exclusive of small craft, enter the port daily; its exports form nearly one-fourth of the total exports of the United Kingdom. Liverpool in some maritime interests excels it. This, the second largest city in Great Britain, had, as late

as 1697, a population of only 5,000; 80 small vessels then belonged to the port. In this year of grace, Liverpool, with her virtual suburbs, Birkenhead and West Derby, has a population considerably over 700,000. In 1872, Liverpool exported, in British and Irish productions, a total value of £100,066,410, which meant little short of forty per cent. of the total exports, of the same kind, from the United Kingdom, while its imports of many staples exceeded those of London. Liverpool has nearly sixty docks and basins, extending along the Mersey for five miles. She possesses nineteen miles of quays, nearly the whole of which have been built since 1812, and warehouses on a scale of magnificence unknown elsewhere.

But such a commerce means much more. Hundreds of thousands of hardy men risk their lives that we may have bread and butter, sugar with our tea, and all the necessities and luxuries of modern civilised life. England has not forgotten them, and for their use has built the lighthouse, the breakwater, and the harbour of refuge. But there are sources of danger which nearly defy human power. Take, among all dangerous shoals and sands, the Goodwin Sands as a prominent example; they are replete with danger to all sailing vessels at least, resorting to the Thames or to the North Sea, while even steamships have been lost on their treacherous banks.

These Sands, so well known to, and feared by, the mariner, are ten miles in length, running in a north-east and south-west direction off the east coast of Kent. They are divided into two portions by a narrow channel, and parts are uncovered at low water. When the tide recedes, the sand is firm and safe, but when the sea permeates it, the mass becomes pulpy, treacherous, and constantly shifting. Three light-vessels (one seven miles from Ramsgate) mark the most dangerous points, and these are themselves exposed to a considerable amount of danger. The only advantage derived from the existence of the Sands is that they form a kind of breakwater, securing a safe anchorage in the roadsteads of the Downs. But if the wind blows strongly off shore, let the mariner beware!

The ancients thought that Britain was distinguished from all the world by unpassable seas and northern winds. The shores of Albion were dreadful to sailors, and our island was for a time regarded as the utmost bounds of the northern known land, beyond which none had ever sailed.

These dangerous Goodwin Sands, if we may believe the chronicles, and there seems no reason why we should not, consisted at one time of about 4,000 acres of low coast land, fenced from the sea by a wall. One tradition, not usually credited, ascribes their present state to the erection of the Tenterden Steeple, by which the funds which should have maintained the sea-wall were diverted. An old authority, Lambard, says, "Whatsoever old wives tell of Goodwyne, Earle of Kent, in tyme of Edward the Confessour, and his sandes, it appeareth by Hector Boëtius, the Brittish chronicler, that theise sandes weare mayne land, and some tyme of the possession of Earl Goodwyne, and by a great inundation of the sea, they weare taken therefro, at which tyme also much harme was done in Scotland and Flanders, by the same rage of the water." At the period of the Conquest, these lands were taken from Earl Goodwin and bestowed on the abbey of St. Augustine, Canterbury, and some accounts say that the Abbot allowed the sea-wall to become dilapidated, and that in the year 1100 the waves rushed in and overwhelmed the whole. The inroads of the sea in many parts of the world would account for anything of the kind.

In dangerous or foggy weather, bells are constantly sounded from the light-ships. A considerable amount of difficulty is experienced in finding proper anchorage for these vessels; and all efforts to establish a fixed beacon have been hitherto unsuccessful. In 1846 a light-house on piles *screwed* into the sands* was erected, but it was carried away the following year by the force of the waves. As soon as a vessel is known to have been driven on the Goodwins, rockets are thrown up from the light-ships, and as soon as recognised on shore a number of boatmen, known as "hovellers," all over that portion of the coast, immediately launch their boats, and make for the Sands, whatever may be the weather. The "hovellers" look upon the wreck itself as in part their property, and make a good deal of money at times, leading, as a rule, a thoroughly reckless sailor's life ashore. But how many poor seamen have had cause to bless their bravery and intrepidity!

The great gale of 1703, one of the most terrible, if not absolutely *the* most terrible which has ever visited our coasts, occasioned the loss of thirteen vessels of the Royal Navy, four on the Goodwin Sands, one in the Yarmouth Roads, one at the Nore, and the rest at various points on the coasts of England and Holland. The record, as preserved by the immortal author of "Robinson Crusoe," is terribly concise in its details. Take a part only of it. The italics are our own.

"*Reserve*, fourth-rate; 54 guns; 258 men. John Anderson, com. Lost in Yarmouth Roads. The captain, purser, master, chyrurgeon, clerk, and 16 men were ashore; *the rest drowned*.

"*Northumberland*, third-rate; 70 guns; 253 men. James Greenway, com. Lost on Goodwin Sands. *All their men lost*.

"*Restoration*, third-rate; 70 guns; 386 men. Fleetwood Emes, com. Lost on Goodwin Sands. *All their men lost*.

"*Sterling Castle*, third-rate; 70 guns; 340 men. John Johnson, com. Lost on Goodwin Sands. Third lieutenant, chaplain, cook, chyrurgeon's mate, four marine captains, and 62 men saved.

"*Mary*, fourth-rate; 64 guns; 273 men. Rear-Admiral Beaumont, Edward Hopson, com. Lost on Goodwin Sands. *Only one man saved*, by swimming from wreck to wreck, and getting to the *Sterling Castle*; the captain ashore, as also the purser." And so the sad story proceeds, Defoe adding that the loss of small vessels hired into the service, and tending the fleet, is not included, several such vessels, with soldiers on board, being driven to sea, and never heard of more.†

A master on board a vessel which was blown "out of the Downs to Norway," describes the sights he saw on those fatal days, the 25th and 26th of November, in homely but graphic language. He says: "By four o'clock we miss'd the *Mary* and the *Northumberland*, who rid not far from us, and found they were driven from their anchors; but what became of them, God knows. And soon after, a large man-of-war came driving down upon us, all her masts gone, and in a dreadful condition. We were in the utmost despair at this

* As described in the latter chapter on the lighthouse.

† This was the same gale which destroyed Winstanley's Eddystone Lighthouse, the first erected on the rock, as already described. It is to be noted that Winstanley's house, at Littlebury, in Essex, 200 miles from the lighthouse, fell down and was utterly destroyed in the same storm.



GREAT STORM IN THE DOWNS, 1783.

sight, for we saw no avoiding her coming thwart our haiser; she drove at last so near us, that I was just going to order the mate to cut away, when it pleas'd God the ship sheer'd contrary to our expectation to windward, and the man-of-war, which we found to be the *Sterling Castle*, drove clear of us, not two ships' lengths, to leeward.

"It was a sight full of terrible particulars to see a ship of eighty guns (*sic*) and about six hundred men* in that dismal case. She had cut away all her masts; the men were all in the confusion of death and despair; she had neither anchor, nor cable, nor boat to help her, the sea breaking over her in a terrible manner, that sometimes she seem'd all under water. And they knew, as well as we that saw her, that they drove by the tempest directly for the Goodwin, where they could expect nothing but destruction. The cries of the men, and the firing their guns, one by one, every half minute for help, terrified us in such a manner, that I think we were half dead with the horror of it." The same writer describes the collision of two vessels, which he saw sink together, and several great ships fast aground and beating to pieces. "One," says he, "we saw foundered before our eyes, and all the people perish'd."

"We have," says Defoe, "an abundance of strange accounts from other parts, and particularly the following letter from the Downs, and though every circumstance in this letter is not literally true, as to the number of ships or lives lost, and the style coarse and sailor-like, yet I have inserted this letter, because it seems to describe the horror and consternation the poor sailors were in at that time; and because this is written from one who was as near an eye-witness as any could possibly be, and be safe.

"SIR,—These lines I hope in God will find you in good health. We are all left here in a dismal condition, expecting every moment to be all drowned; for here is a great storm, and is very likely to continue. We have here the Rear-Admiral of the Blue in the ship called the *Mary*, a third-rate, the very next ship to ours, sunk, with Admiral Beaumont, and above 500 men drowned; the ship called the *Northumberland*, a third-rate, about 500 men, all sunk and drowned; the ship called the *Sterling Castle*, a third-rate, all sunk and drowned, above 500 souls; and the ship called the *Restoration*, a third-rate, all sunk and drowned. These ships were all close by us, which I saw. These ships fired their guns all night and day long, poor souls, for help, but the storm being so fierce and raging, could have none to save them. The ship called the *Shrewsbury*, that we are in, broke two anchors, and did run mighty fierce backwards, within sixty or eighty yards of the Sands, and as God Almighty would have it, we flung our sheet-anchor down, which is the biggest, and so stopt; here we all prayed God to forgive us our sins, and to save us, or else to receive us into his heavenly Kingdom. If our sheet-anchor had given way, we had been all drowned; but I humbly thank God, it was his gracious mercy that saved us. There's one, Captain Fanel's ship, three hospital ships, all split, some sunk, and most of the men drowned.

"There are above forty merchant ships cast away and sunk; to see Admiral Beaumont, that was next us, and all the rest of his men, how they climbed up the main-mast, hundreds

* This narrative differs from the more circumstantial account given by Defoe, doubtless from official authorities. The vessel had seventy guns, and 349 men; the latter, likely enough, may not have been her full complement.

at a time crying out for help, and thinking to save their lives, and in the twinkling of an eye were drowned; I can give you no account, but of these four men-of-war aforesaid, which I saw with my own eyes, and those hospital ships, at present, by reason the storm hath drove us far distant from one another; Captain Crow, of our ship, believes we have lost several more ships of war, by reason we see so few; we lie here in great danger, and waiting for a north-easterly wind to bring us to Portsmouth, and it is our prayer to God for it; for we know not how soon this storm may arise, and cut us all off, for it is a dismal place to anchor in. I have not had my clothes off, nor a wink of sleep these four nights, and have got my death with cold almost.—Yours to command,

“‘MILES NORCLIFFE.’” *

The following is also a characteristic letter from Captain Soanes of H.M.S. *Dolphin*, then at Milford Haven, showing also how far the storm extended on our coasts:—

“SIR,—Reading the advertisement in the *Gazette* of your intending to print the many sad accidents in the late dreadful storm, induced me to let you know what this place felt, though a very good harbour. Her Majesty's ships the *Cumberland*, *Coventry*, *Loo*, *Hastings*, and *Hector*, being under my command, with the *Rye*, a cruiser on this station, and under our convoy, about 130 merchant ships bound about land; the 26th of November, at one in the afternoon, the wind came at S. by E. a hard gale, between which and N.W. by W. it came to a dreadful storm; at three the next morning was the violentest of the weather, when the *Cumberland* broke her sheet-anchor, the ship driving near this, and the *Rye* both narrowly escap'd carrying away; she drove very near the rocks, having but one anchor left, but in a little time they slung a gun, with the broken anchor fast to it, which they let go, and wonderfully preserved the ship from the shore. Guns firing from one ship or other all the night for help, though 'twas impossible to assist each other, the sea was so high, and the darkness of the night such, that we could not see where any one was, but by the flashes of the guns; when daylight appeared, it was a dismal sight to behold the ships driving up and down, one foul of another, without masts, some sunk, and others upon the rocks, the wind blowing so hard, with thunder, lightning, and rain, that on the deck a man could not stand without holding. Some drove from Dale, where they were sheltered under the land, and split in pieces, the men all drowned; two others drove out of a creek, one on the shore so high up was saved; the other on the rocks in another creek, and bulged; an Irish ship that lay with a rock through her, was lifted by the sea clear away to the other side of the creek on a safe place; one ship forced ten miles up the river before she could be stopped, and several strangely blown into holes, and on banks; a ketch, of Pembroke, was drove on the rocks, the two men and a boy in her had no boat to save their lives, but in this great distress a boat which broke from another ship drove by them, without any in her, the two men leaped into her and were saved, but the boy was drowned. A prize at Pembroke was lifted on the bridge, whereon is a mill, which the water blew up, but the vessel got off again; another vessel carried almost into the gateway which leads to the

* A large part of the information incorporated above is derived from one of the least known of Defoe's works, entitled, “The Storm: or, a Collection of the most Remarkable Casualties and Disasters which happened in the Late Dreadful Tempest, both by Sea and Land.”

bridge, and is a road, the tide flowing several feet above the common course. The storm continued till the 27th, about three in the afternoon; that by computation nigh thirty merchant ships and vessels without masts are lost, and what men are lost is not known; three ships are missing, that we suppose men and all lost. None of her Majesty's ships came to any harm; but the *Cumberland* breaking her anchor in a storm which happen'd the 18th at night, lost another, which renders her incapable of proceeding with us till supplied. I saw several trees and houses which are blown down.—Your humble servant,

"JOS. SOANES."

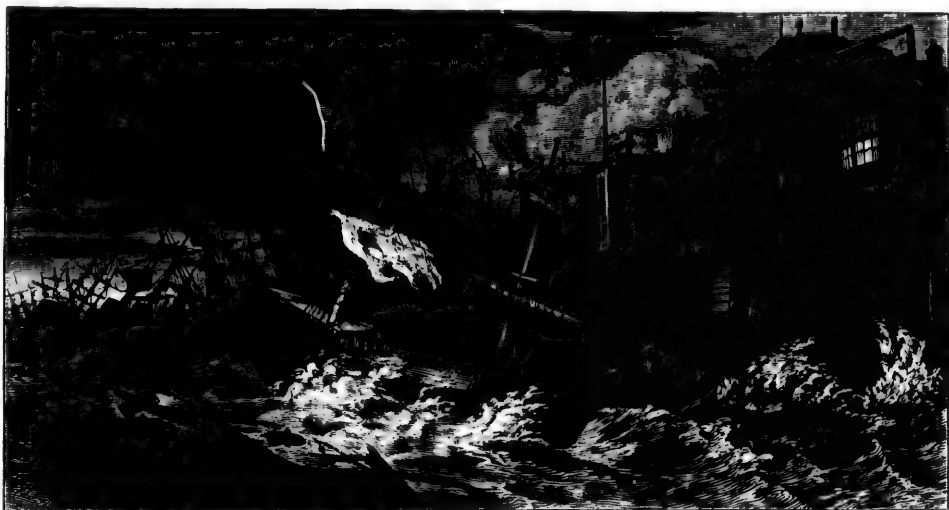
The disasters caused by this terrible gale extended over the English coasts. At Bristol the tide filled the merchants' cellars, spoiling 1,000 hogsheads of sugar, 1,500 hogsheads of tobacco, and any quantity of other produce, the damage being estimated at £100,000. Eighty people were drowned in the marshes and river. Among the shipping casualties, the *Canterbury* store-ship went ashore, and twenty-five men were drowned from her. The Severn overflowed the country, doing great damage at Gloucester; and 15,000 sheep were drowned on the levels and marshes. Four merchant ships were lost in Plymouth Roads, and most of the men were drowned. At Portsmouth a number of vessels were blown to sea, and some of them never heard of more. About a dozen ships were driven from our coasts to Holland, the crews, for the most part, being saved. At Dunkirk, twenty-three or more vessels were dashed to pieces against the pier-head.

Mr. Peter Walls, master or chief lighthouse-keeper of the Spurn Light at the mouth of the Humber, was present on the 26th of November, the fatal night of the storm. He thought that his lighthouse must have been blown down, and the tempest made the fire in it burn so fiercely that "it melted down the iron bars, on which it laid, like lead," so that they were obliged when the fire was nearly extinguished to put in fresh bars, and re-kindle the fire, keeping it up till the morning dawn, when they found that some six or seven-and-twenty sail of ships were driving helplessly about the Spurn Head, some having cut, and others broken their cables. These were a part of two fleets then lying in the Humber, having put in there by stress of weather a day or two before. Three ships were driven on an island called the Don. The first no sooner touched bottom than she completely capsized, turning keel up; strange to say, out of six men on board, only one was drowned, the other five being rescued by the boat of the second ship. They landed at the Spurn Lighthouse, where Mr. Walls got them good fires and all the comforts they needed. The second ship, having nobody on board, was driven to sea and never seen or heard of more. The third broke up, and next morning some coals that had been in her were all that was to be seen. Of the whole number of vessels in the Humber, few, if any, were saved.

Defoe estimates that 150 sea-going vessels of all sorts were lost in this terrific gale; but this is, in all probability, a very low estimate. And it is as nothing to the fearful loss of life, which amounted to 8,000 souls.

The townspeople of Deal, in particular, were blamed for their inhumanity in leaving many to their fate who could have been rescued. Boatmen went off to the sands for booty, some of whom would not listen to poor wretches who might have been saved. Many unfortunate shipwrecked persons could be seen, by the aid of glasses, walking on the Goodwin

Sands in despairing postures, knowing that they would, as Defoe puts it, "be washed into another world" at the reflux of the tide. The Mayor of Deal, Mr. Thomas Powell, asked the Custom House officers to take out their boats and endeavour to save the lives of some of these unfortunates, but they utterly refused. The mayor then offered, from his own pocket, five shillings a head for all saved, and a number of fishermen and others volunteered, and succeeded in bringing 200 persons on shore, who would have been lost in half an hour afterwards. The Queen's agent for sick and wounded seamen would not furnish a penny for their lodging or food, and the good mayor supplied all of them with what they required. Several died, and he was compelled to bury them at his own expense; he furnished a large



THE STORM IN THE THAMES AT WAPPING.

number with money to pay their way to London. He received no thanks from the Government of the day, but some long time after was re-imbursed the large sums he had expended.

"Nor," says Defoe, "can the damage suffered in the river of Thames be forgot. It was a strange sight to see all the ships in the river blown away, the Pool was so clear, that, as I remember, not above four ships were left between the upper part of Wapping and Ratcliffe Cross, for the tide being up at the time when the storm blew with the greatest violence, no anchors or landfast, no cables or moorings, would hold them, the chains which lay across the river for the mooring of ships, all gave way.

"The ships breaking loose thus, it must be a strange sight to see the hurry and confusion of it; and, as some ships had nobody at all on board, and a great many had none but a man or boy just to look after the vessel, there was nothing to be done but to let every vessel drive whither and how she would.

"Those who know the reaches of the river, and how they lie, know well enough that the wind being at south-west-westerly, the vessels would naturally drive into the bite

or bay from Ratcliffe Cross to Limehouse Hole, for that the river winding about again from thence towards the new dock at Deptford runs almost due south-west, so that the wind blew down one reach and up another, and the ships must of necessity drive into the bottom of the angle between both.

"This was the case, and as the place is not large, and the number of ships very great, the force of the wind had driven them so into one another, and laid them so upon one another, as it were in heaps, that I think a man may safely defy all the world to do the like.

"The author of this collection had the curiosity the next day to view the place, and



THE WEST-INDIAMEN DRIVEN ASHORE AT TILBURY FORT.

to observe the posture they lay in, which nevertheless it is impossible to describe; there lay, by the best account he could take, few less than seven hundred sail of ships, some very great ones, between Shadwell and Limehouse inclusive; the posture is not to be imagined but by them that saw it; some vessels lay heeling off with the bow of another ship over her waist, and the stern of another upon her forecastle; the boltsprits of some drove into the cabin-windows of others; some lay with their sterns tossed up so high that the tide flowed into their forecastles before they could come to rights; some lay so leaning upon others that the undermost vessels would sink before the other could float; the numbers of masts, boltsprits and yards split and broke, the staving the heads and sterns,

and carved work, the tearing and destruction of rigging, and the squeezing of boats to pieces between the ships, is not to be reckoned; but there was hardly a vessel to be seen that had not suffered some damage or other in one or all of these articles.

"There were several vessels sunk in this hurricane, but as they were generally light ships the damage was chiefly to the vessels; but there were two ships sunk with great quantity of goods on board: the *Russell* galley was sunk at Limehouse, being a great part laden with bale goods for the Straits; and the *Sarah* galley, laden for Leghorn, sunk at an anchor at Blackwall, and though she was afterwards weighed and brought on shore, yet her back was broken, or so otherwise disabled that she was never fit for the sea. There were several men drowned in these last two vessels, but we could never come to have the particular number.

"Near Gravesend several ships drove on shore below Tilbury Fort, and among them five bound for the West Indies; but as the shore is oozy and soft, the vessels sat upright and easy." The loss of small craft in the river was enormous; not less than 300 ships' boats and 500 wherries were sunk or dashed to pieces. Barges and lighters were sunk and broke loose by the score, and twenty-two watermen and others working on the river were drowned.

The effect of this tempest was felt very severely on shore, not less than 123 persons being killed by falling buildings, &c. It is said that not less than 800 dwellings were blown down, while barns, stacks of chimneys, pinnacles, steeples, and trees, were strewed all over the country.

Dozens of remarkable cases might be given of wonderful preservations at sea during this storm, and one or two have been cited. A small vessel ran on the rocks in Milford Haven and was fast breaking up, when an empty boat, which had got loose, drifted past so near the wreck that two men jumped into it and saved their lives. A poor boy on board could not jump so far, and was drowned. A poor sailor of Brighthelmston was taken off a wreck after he had hung by his hands and feet on the top of a mast for eight-and-forty hours, the sea raging so high that no boat durst approach him. A waterman in the river Thames, lying asleep in the cabin of a barge near Blackfriars, was driven below London Bridge, "and the barge went of herself into the Tower Dock, and lay safe on shore. The man never waked nor heard the storm till it was day; and, to his great astonishment, he found himself safe, as above." Two boys, lodging in the Poultry, and living in a top garret, were, by the fall of chimneys, which broke through the floors, carried quite to the bottom of the cellar, and received no hurt at all.

It has been shown how universal was the storm on the English coasts, and it extended to all parts of the interior.* In Norfolk, a small town experienced the horrors

* Although so severe in England and a large part of the Continent, Scotland scarce felt the fury of the gale. Defoe, in his poem on the subject, says:—

"They tell us Scotland 'scaped the blast;
No nation else have been without a taste:
All Europe sure have felt the mighty shock;
'T has been a universal stroke.
But heaven has other ways to plague the Scots,
As poverty and plots."

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of fire simultaneously with the gale. The inhabitants were powerless to extinguish it; and the wind blew the ruins, almost as much as the fire, in all directions. If the people came to windward they were in danger of being blown into the flames, and to leeward they dared not approach the fire, which would have scorched them up. Those who escaped the conflagration ran the imminent risk of being knocked on the head by bricks and tiles, which flew about as though they were tinder. The storm, although most severe on the Friday before-mentioned, lasted almost continuously for a week.

The city of London was a strange spectacle at this time. "The houses looked like skeletons," says Defoe, "and an universal air of horror seemed to sit on the countenances of the people. All business seemed to be laid aside for the time, and people were generally intent upon getting help to repair their habitations." The streets lay covered with tiles and slates, bricks and chimney-pots. Common tiles rose from 21s. per thousand to £6. Above 2,000 great stacks of chimneys were blown down in and about London, besides gable-ends and roofs by the score, and about twenty whole houses in the suburbs. In addition to those killed by the fall of various parts of buildings, above 200 were reported as wounded and maimed. And it must be remembered that these were not the days of morning and evening and special editions, and copious and generally correct reports. Had telegraphs and railways and steamships brought in the news collected by innumerable correspondents, as they would to-day, Defoe's book would never have been compiled. And it may be here observed, in honour of the memory of that immortal author, that he never cites a case, or speaks of it as a positive fact, without giving his authority or authorities. He says in one place, "Some of our printed accounts give us larger and plainer accounts of the loss of lives than I will venture to affirm for truth: as of several houses near Moorfields levelled with the ground; fourteen people drowned in a wherry going to Gravesend and five in a wherry from Chelsea. Not that it is not very probable to be true, but, as I resolve not to hand anything to posterity but what comes very well attested, I omit such relations as I have not extraordinary assurance as to the fact." This is hardly the way with all book-makers!

Most of those killed were buried or crushed by the broken fragments and rubbish of falling stacks of chimneys or walls. The fall of brick walls made a serious item in the losses. At Greenwich Park several pieces of the wall were down for a hundred rods at a place; the palace of St. James's was greatly damaged; the roof of the guard-house at Whitehall blown off, seriously hurting nine soldiers; the lead stripped off and rolled up like parchment from scores of churches and public buildings, including Westminster Abbey and Christ Church Hospital. "It was very remarkable," Defoe notes, "that the bridge over the Thames [*i.e.*, Old London Bridge] received so little damage, the buildings standing high and not sheltered by other erections, as they would be in the streets. Above a hundred elms, some of them said to have been planted by Wolsey, were blown down in St. James's Park. Very fortunately the storm was succeeded by fine weather: for had rain or snow followed, the misery and damage to hundreds and hundreds of tenants would have been fearfully increased.

At Stowmarket, in Suffolk, one of the largest spires—100 feet high above the steeple—was completely carried away, with all its heavy timbers and an immense quantity

of lead. So in Brenchly and Great Peckham, Kent, the former doing damage to the church and porch as it fell, and entailing a total loss of £800 to £1,000, which would represent much more in these days. "The cathedral church of Ely," said one of Defoe's correspondents, "by the providence of God, did, contrary to all men's expectations, stand out the shock, but suffered very much in every part of it, especially that which is called the body of it, the lead being torn and rent up a considerable way together; about 40 lights of glass blown down and shattered to pieces; one ornamental pinnacle, belonging to the north aisle, demolished; and the lead in divers other parts of it blown up into great heaps. Five chimneys falling down in a place called the Colledge, the place where the prebendaries' lodgings are, did no other damage (prais'd be God!) than beat down some part of the houses along with them. The loss which the church and college of Ely sustained being, by computation, near £2,000." Accounts of nearly irretrievable damage done to valuable painted church windows, for one of which—at Fairford, Gloucester—£1,500 had been offered, came from many points. In some cases the lead blown from roofs, amounting to tons in weight, was so tightly rolled up that it took a number of men to unroll it without cutting or other damage.

The Bishop of Bath and Wells was killed under rather remarkable circumstances. The palace was the relic of a very old castle, only one corner of it being modernised for his lordship's use. Had the bishop slept in the new portion his life would have been spared; but he remained in one of the older apartments. Two chimney-stacks fell and crashed in the roof, driving it upon the bishop's bed, forcing it quite through the next floor into the hall, and burying both himself and lady in the rubbish. The former appears to have risen, perhaps perceiving the approaching danger, and was found, with his brains dashed out, near a doorway.

One of the most remarkable cases of the power of the wind ashore was the removal of a stone of four hundredweight, which lay sheltered under a bank, to a distance of seven yards. On the Kingscote estate, in Gloucester, 600 trees, all about eighty feet in height, were thrown down within a compass of five acres. The storm was accompanied by thunder and lightning and waterspouts. A clergyman, writing from Besselsleigh, says:—"On Friday, the 26th of November, in the afternoon, about four of the clock, a country fellow came running to me, in a great fright, and very earnestly entreated me to go and see a pillar, as he called it, in the air in a field hard by. I went with the fellow, and when I came found it to be a spout marching directly with the wind; and I can think of nothing I can compare it to better than the trunk of an elephant, which it resembled—only much bigger. It was extended to a great length, and swept the ground as it went, leaving a mark behind. It crossed a field, and, which was very strange (and which I should scarce have been induced to believe had I not myself seen it, besides several countrymen, who were astonished at it, meeting with an oak that stood towards the middle of the field, snapped the body of it asunder. Afterwards, crossing a road, it sucked up the water that was in the cart-ruts. Then, coming to an old barn, it tumbled it down, and the thatch that was on the top was carried about by the wind, which was then very high and in great confusion. After this I followed it no farther, and therefore saw no more of it, but a parishioner of mine, going from hence to Hincksey, in a field

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A LIFE-BOAT GOING OUT.

about a quarter of a mile off of this place, was on the sudden knocked down and lay upon the place till some people came by and brought him home; and he is not yet quite recovered." An earthquake is also said to have followed the great storm.

Enough has now been written to show how universal were the effects of this terrible gale. The details, as recorded by Defoe and others, would fill several chapters like the present. The author of "Robinson Crusoe" puts, as we have seen, the loss of life partly on land but principally by sea, at 8,000, but a French authority places it at the enormous number of 30,000! It can well be believed that a large proportion of the casualties were never reported or recorded.



GREATHEAD'S LIFE-BOAT.

CHAPTER XV.

"MAN THE LIFE-BOAT!"

The Englishman's direct interest in the Sea—The History of the Life-boat and its Work—Its Origin—A Coach-builder the First Inventor—Lionel Lukin's Boat—Royal Encouragement—Wreck of the *Adventure*—The Poor Crew Drowned in Sight of Thousands—Good out of Evil—The South Shields Committee and their Prize Boat—Wouldhave and Greathead—The latter Rewarded by Government, &c.—Slow Progress of the Life-boat Movement—The Old Boat at Redcar—Organisation of the National Life-boat Institution—Sir William Hillary's Brave Deeds—Terrible Losses at the Isle of Man—Loss of Three Life-boats—Reorganisation of the Society—Immense Competition for a Prize—Beeching's "Self-righting" Boats—Buoyancy and Ballast—Dangers of the Service—A Year's Wrecks.

THE history of the life-boat is one that concerns every Englishman. In this isle of the sea, our own beloved Britain, our sympathies are constantly excited on behalf of those who suffer from shipwreck. It would not be too much to say that one-half the population of the United Kingdom have some direct interest in this matter. Let us not be misunderstood. Pecuniary interests in shipping are held here more largely than in any other country, but

we are not all shipowners or merchants. But how many of us have some brother or friend a seafarer! Of the writer's own direct relatives six have travelled and voyaged to very far distant lands, and the friends of whom the same might be said would aggregate several score. This is no uncommon case.

The origin of the life-boat, as now understood, is of very modern date. Those who would study the matter in its entirety cannot do better than consult the work* from which the larger part of the material incorporated in the present chapter is derived. One of the very earliest inventors of a life-boat was Mr. Lionel Lukin, a coach-builder of Long Acre, who turned his attention to the subject in 1784, from purely benevolent motives. The then Prince of Wales (afterwards George IV.), who knew Lukin personally, not only encouraged him to test his inventions, but offered to pay the expenses. Lukin purchased a Norway yawl, to the outer frame of which he added a projecting gunwale of cork, tapering from nine inches amidships to very little at the bows and stern. Hollow water-tight enclosures gave it great buoyancy, while ballast sufficient for stability was afforded by a heavy false keel of iron. On this principle several boats were constructed, and found to be, as the inventor describes them, "unimmergible." The Rev. Dr. Shairp, of Bamborough, hearing of the invention, and having charge of a charity for saving life at sea, sent a boat to Lukin to be made "unimmergible." This was done, and satisfactory accounts were afterwards received of the altered boat, which was reported to have saved several lives in the first year of its use. The Admiralty and Trinity House would have nothing to do with it, in spite of the Prince of Wales' interest in the matter. It has been said that a committee is a body without a conscience; it was true in those good old days. Lukin retired from business in 1824, and went to live at Hythe in Kent, where, ten years after, he died; the inscription on his tomb in Hythe churchyard says that he was the first to build a life-boat.

Notwithstanding Lukin's increasing efforts to bring his life-boats into general use, hardly any progress had been made in their general adoption till 1789, when the *Adventure*, of Newcastle, was wrecked at the mouth of the Tyne. While this vessel lay stranded on a dangerous sand at the entrance of the river, in the midst of tremendous breakers, her crew "dropped off one by one from the rigging," only three hundred yards from the shore, and in the presence of thousands of spectators. This horrible disaster led to good results, for a committee was immediately appointed at a meeting of the inhabitants of South Shields, and premiums offered for the best model of a life-boat "calculated to brave the dangers of the sea, particularly of broken water." From many plans submitted two were selected, those of Mr. William Wouldhave and Mr. Henry Greathead. The idea of the first is said to have been suggested by the following circumstance. Wouldhave had been asked to assist a woman in putting a "skeel of water on her head, when he noticed that she had a piece of a broken wooden dish lying in the water, which floated with the points upwards, and turning it over several times, he found that it always righted itself. Greathead's model had a curved instead of a straight keel, and he, as the only practical boatbuilder who had competed, was awarded the premium, some of Wouldhave's ideas in regard to the use of cork being incorporated. This first boat, thirty feet in length, had a cork lining twelve inches thick, reaching

* "History of the Life-boat and its Work," by Richard Lewis, of the Inner Temple, Esq., Secretary of the National Life-boat Institution.

from the deck to the thwarts, and a cork fender outside sixteen inches deep, four inches wide, and twenty-one feet long, nearly 7 cwts. of cork being fitted to the boat altogether. Greathead's curved keel was, however, the main point, and he is regarded as the inventor of the first practicable life-boat. From 1791 to 1797 his first boat was the means of saving the whole or larger part of the crews of five ships. Notwithstanding all this, no other life-boat was built till 1798, when the then Duke of Northumberland ordered one to be built at his own expense, which in two years saved the crews of three vessels. Others were soon after constructed, and before the end of 1803 Greathead built no less than thirty-one, eight of which were for foreign countries. In the beginning of 1802, when two hundred lives had been saved at the entrance of the Tyne alone, Greathead applied to Parliament for a national reward. Possibly it is more remarkable that he obtained it. £1,200 was voted to him, to which the Trinity House, Lloyd's, and the Society of Arts added substantial presents. The Emperor of Russia sent a diamond ring to the inventor.

After this, one might have reasonably thought that life-boats had become a recognised institution and a national necessity. Not so. For years afterwards there was hardly an advance made, and there was no organised society to work them. The Government was apathetic. In 1810, one of Greathead's life-boats, carried overland to Hartley on the coast of Northumberland, rescued the crews of several fishing-boats. On returning toward the shore, the boat got too near a fatal rock-reef, and was split in halves; thirty-four poor fellows—a moment before the savers and the saved—were drowned. The authority before cited says that even now several of Greathead's boats—exclusively rowing boats—are to be found on the coast; the oldest one is that in the possession of the boatmen at Redcar, it having been built in 1802. On seeing this fine old life-boat, which had saved some scores of lives, Viscount Stratford de Redcliffe composed some years ago the following verses, which were set to music:—

"The Life-boat! Oh, the Life-boat!

We all have known so long,
A refuge for the feeble,
The glory of the strong.
Twice thirty years have vanished,
Since first upon the wave
She housed the drowning mariner,
And snatched him from the grave.

• • • •
The voices of the rescued,
Their numbers may be read,
The tears of speechless feeling
Our wives and children shed;
The memories of mercy
In man's extremest need,
All for the dear old Life-boat
Uniting seem to plead."

As already stated, the important movement for saving life from shipwreck languished for some time. To Sir William Hillary and Thomas Wilson, then one of the Members of Parliament for London, is due the organisation of that most excellent society which has done more in the cause of humanity than, perhaps, any other whatever, and has done it on means which even

to-day are too limited. Sir William Hillary was not a talker or subscriber merely, but had been personally active in saving life. When a Government cutter, the *Vigilant*, was wrecked in Douglas Bay, Isle of Man, where he was then residing, he was one of the foremost in rescuing a part of the crew. Listen to our authority: "Between the years 1821 and 1846, no fewer than 144 wrecks had taken place on the island, and 172 lives were lost; while the destruction of property was estimated at a quarter of a million. In 1825, when the *City of Glasgow* steamer was stranded in Douglas Bay, Sir William Hillary assisted in saving the lives of sixty-two persons; and in the same year eleven men from the brig *Leopard*, and nine from the sloop *Fancy*, which became a total wreck. In 1827—32, Sir William, accompanied by his son, saved many other lives; but his greatest success was on the 20th of November, 1830, when he saved in the life-boat twenty-two men, the whole of the crew of the mail steamer *St. George*, which became a total wreck on St. Mary's Rock. On this occasion he was washed overboard among the wreck, with other three persons, and was saved with great difficulty, having had six of his ribs fractured." No wonder that a genuine hero of this character should have succeeded in obtaining the assistance and encouragement of His Majesty King George IV., and any number of royal highnesses, archbishops, bishops, noblemen, and other distinguished people,* when the formation of a "Royal National Institution for the Preservation of Life from Shipwreck" was mooted. The Society was immediately organised, and the receipts for the first year of its existence were £9,800 odd. The Committee, in their first report, were able to state that they had built and stationed twelve life-boats, while, doubtless, from their good example, thirty-nine life-boats had been stationed on our shores by benevolent individuals and associations not connected with the Institution. In its early days, the Society assisted local bodies to place life-boats on the coast, such being independent of its control. The good work done by the Association in its early days is indicated in the following statement. In the second annual report the Committee showed that up to that period the Society had contributed to the saving of 342 lives from shipwreck, either by its own life-saving apparatus or by other means, for which it had granted rewards. And its total revenue for the second year was only £3,392 7s. 5d.!† For fifteen years afterwards the annual receipts were still smaller.

Between 1841 and 1850 the Institution lost three life-boats, and this was the smallest part of the loss. In October, 1841, one of the boats at Blyth, Northumberland, while being pulled against a strong wind, was struck by a heavy sea, causing her to run stern under, and to half fill with water. A second sea struck her, and she capsized. Ten men were drowned. The second case occurred at Robin Hood's Bay, on the coast of Yorkshire, in February, 1843. The life-boat went off to the assistance of a stranded vessel, the *Ann*, of London, during a fresh northerly gale. The life-boat had got alongside the wreck, and was taking the crew off, when, as far as can be understood, several men jumped into her at the moment when a great wave struck her, and she capsized. Many of the crew got on her bottom, while three remained underneath her, and in this state she drifted towards the shore on the opposite side of the bay. On seeing the accident from the shore, five gallant fellows launched a boat and tried to pull off to the rescue, but had hardly encountered two seas, when she was turned *end over end*, two of

* Including the grand name of William Wilberforce.

† Its revenue is now approximately ten times the above amount.

her crew being drowned. An officer of the Coastguard service and eleven men lost their lives on this occasion; a few were saved, coming to shore safely on the bottom of the life-boat, and even under it, in its reversed condition.

A still worse accident occurred, in December, 1849, to the South Shields life-boat, which had gone out with twenty-four experienced pilots to the aid of the *Betsy* of Littlehampton, stranded on the Herd Sand. She had reached the wreck, and was lying alongside, though badly secured. The shipwrecked men were about to descend into the boat, when a heavy sea, recoiling from the bows of the vessel, lifted her on end, and a second sea completed the work of destruction by throwing her completely over. She ultimately drifted ashore. Twenty out of twenty-four on board were drowned. On seeing the accident, two other life-boats immediately dashed off, and saved four of the pilots and the crew of the *Betsy*.



LIFE-BOAT SAVING THE CREW OF THE "ST. GEORGE."

The year 1850 marked an epoch in the history of life-boats, for then the Institution was thoroughly re-organised. It was arranged that the boats should be periodically inspected by qualified officers, and that a fixed scale of payment, both for actual service or quarterly exercise, should be made to the coxswains and crews.* His Grace the late Duke of Northumberland offered a prize of one hundred guineas for the best model of a life-boat, and a like sum towards constructing a boat on that model. No less than 280 plans and models were sent in, not merely from all parts of the United Kingdom, but from France, Holland, Germany, and the United States. After some six months' detailed examination on the part of the committee, Mr. James Beeching, of Great Yarmouth, was awarded the prize. That gentleman constructed several boats shortly afterwards, embodying most or

* For the perilous nature of the employment, the pay is ridiculously small. It must be, however, in fairness to the Institution, remembered that it is a society depending on the benevolent public for its support, and is not a Government concern. Each boat has its appointed coxswain at a salary of £8 per annum, and assistants at £2 per annum. On every occasion of going afloat to save life, the coxswain and his men receive alike, 10s. if by day, and £1 if by night.

all of the leading improvements, and was the first to build a "self-righting" life-boat. All of the Institution's modern boats are on this principle.

"The chief peculiarity of a life-boat," says our authority, "which distinguishes it from all ordinary boats, is its being rendered unsubmergible, by attaching to it, chiefly within boards, water-tight air-cases, or fixed water-tight compartments under a deck. . . . Especially it is essential that the spare space along the sides of a life-boat, within boards, should be entirely occupied by buoyant cases or compartments; as when such is the case, on her shipping a sea, the water, until got rid off, is confined to the midships part of the boat, where, to a great extent, it serves as ballast, instead of falling over to the lee-side, and destroying her equilibrium, as is the case in an ordinary open boat." The Institution's self-righting boats are ballasted with *heavy* iron keels (up to 21 cwt.), and *light* air-tight cases, cork, &c. The advantage of employing a ballast of less specific gravity than water is, that in the event of the boat being stove in, the buoyancy of the material itself then comes into play.

"Self-righting" is, of course, a most important principle in life-boats, and out of some 250 boats of the Institution there are scarcely more than twenty which do not possess it. Up to twenty years or so ago it was derided by many otherwise practical men. Yet as early as 1792 we find the Rev. James Bremner, of Walls, Orkney, proposing to make all ordinary boats capable of righting themselves in the water by placing two water-tight casks, parallel to each other, in the head and stern sheets, and by affixing a heavy iron keel. The self-righting power of to-day is obtained by the following means. The boat is built with considerably higher gunwales at the bows and stern than in the centre, while four to six feet of the space at either end are water-tight air-chambers. A heavy iron keel is attached, and a nearly equal weight of light air-cases, and cork ballast cases are stowed betwixt the boat's floor and the deck. "No other measures are necessary to be taken in order to effect the self-righting power. When the boat is forcibly placed in the water with her keel upwards, she is floated unsteadily on the two air chambers at bow and stern, while the heavy iron keel and other ballast then being carried above the centre of gravity, an unstable equilibrium is at once effected, in which dilemma the boat cannot remain, the raised weight falls on one side or the other of the centre of gravity, and drags the boat round to her ordinary position, when the water shipped during the evolution quickly escapes through the relieving tubes, and she is again ready for any service that may be required of her."

Nearly all life-boat stations are provided with a transporting carriage, built especially for the particular boat. The use of this, in many cases, is to convey the boat by land to the point nearest the wreck. On some coasts the distance may be several miles. In addition to this, a boat-carriage is of immense service in launching a boat from a beach without her keel touching the ground; so much so, indeed, that one can be readily launched from a carriage through a high surf, when without one she could not be got off the beach. The carriage is often backed sufficiently far into the water to enable the boat to float when she is run off.

The foregoing will give a sufficient idea of the boat itself, and now to its work. Courage and ability are required to put it into action, and the dangers to which the crew of a life-boat are exposed entitle those who encounter them to the greatest honour. "It is impossible

to exaggerate the awful circumstances attending a shipwreck. Let us picture the time, when, after a peaceful sunset and the toils of the day are over, the hero of the life-boat has retired to rest, and the silence of the night is unbroken except by the murmur of the winds and the noise of the sea breaking on the shore. With the approach of the storm, however, the winds and waves rise in fury upon the deep, and with their mingled vengeance lash the cliffs and the beach. A signal of distress arouses the coxswain and his men; crowds rush in curiosity to the cliffs, or line the shore, heedless of the driving rain or the blinding sleet. Barrels of tar are lighted on the coast, and the signal-gun and the fiery rocket make a fresh appeal to the brave. The boat-house is unlocked, and the life-boat with her crew is dragged hurriedly to the shore. The storm rages wildly, and the mountains of surf and sea appal the stoutest heart. The gallant men look dubiously at the work before them, and fathers and mothers and wives and children implore them to desist from a hopeless enterprise. The voice of the coxswain, however, prevails. The life-boat is launched among the breakers, cutting bravely through the foaming mass—now buried under the swelling billows, or rising on their summit—now dashed against the hapless wreck still instinct with life—now driven from it by a mountain wave—now embarking its living freight, and carrying them, through storm and danger and darkness, to a blessed shore. Would that this was the invariable issue of a life-boat service! The boat that adventures to a wreck meets with disaster itself occasionally; and in the war of the elements some of its gallant crew have sometimes been the first of its victims." And when we consider that the number of wrecks on the coasts of the United Kingdom alone, averaged 1,446 per annum for the twenty years between 1852 and 1871, we can form an idea of the importance of life-boat work on these shores. In the succeeding chapter some special instances of perilous and successful rescues will be presented.

CHAPTER XVI.

"MAN THE LIFE-BOT!" (continued).

A "Dirty" Night on the Sands—Wreck of the *Samaritano*—The Vessel boarded by Margate and Whitstable Men—A Gale in its Fury—The Vessel breaking up—Nineteen Men in the Fore-rigging—Two Margate Life-boats Wrecked—Fate of a Lagger—The Scene at Ramsgate—"Man the Life-boat!"—The good Steamer *Aid*—The Life-boat Towed out—A Terrible Trip—A Grand Struggle with the Elements—The Flag of Distress made out—How to reach it—The Life-boat cast off—On through the Breakers—The Wreck reached at last—Difficulties of Rescuing the Men—The poor little Cabin Boy—The Life-boat Crowded—A Moment of great Peril—The Steamer reached at last—Back to Ramsgate—The Reward of Merit—Loss of a Passenger Steamer—The Three Lost Corpses—The Emigrant Ship on the Sands—A Splendid Night's Work.

THE waves are tearing over the fatal Goodwin Sands, but the life-boats of Ramsgate, Margate, Deal, and Kingsdown are ready for their work. At Ramsgate, in particular, the life-boat is ready at her moorings in the harbour, while a powerful steam-tug—the *Aid*, whose interesting history would form many a chapter—is lying with steam partially up, prepared to tow out the boat as near the Goodwin Sands as may be with



LEADS OF A LIFE-BOAT AT THE SHIPWRECK OF THE "ANN."

safety. The "storm warriors," as the Rev. Mr. Gilmore calls them with so much appropriateness, in his fascinating and powerfully-written work,* "are on the watch, hour after hour, through the stormy night walking the pier, and giving keen glances to where the Goodwin Sands are white with the churning, seething waves that leap high, and plunge and foam amid the treacherous shoals and banks. Look! a flash is seen; listen, in a few seconds, yes, there is the throb and boom of a distant gun, a rocket cleaves the darkness; and now the cry—"Man the life-boat! Man the life-boat! Seaward ho! Seaward ho!" Storm warriors to the rescue!



A LIFE-BOAT AND CARRIAGE—LATEST FORM.

One Sunday night in the month of February, a few years ago, the weather was what sailors call "dirty," and accompanied by sudden gusts of wind and snow-squalls. Before the light broke on Monday morning, the Margate lugger, *Eclipse*, put out to sea to cruise round the shoals and sands in the neighbourhood of Margate, on the look-out for the victims of any disasters that might have occurred during the night, and the crew soon discovered that a vessel was ashore on the Margate sands. She proved to be the Spanish brig *Samaritano*, bound from Antwerp to Santander, and laden with a valuable

* "Storm Warriors; or, Life-boat Work on the Goodwin Sands," by the Rev. John Gilmore, M.A.

cargo; she had a crew of eleven men under the command of the captain, Modesto Crispo. Hoping to save the vessel, the lugger, as she was running for the brig, spoke a Whitstable fishing-smack, and borrowed two of her men and her boat. They boarded the brig as the tide went down, and hoped to be able to get her off the sands at the next high water. For this purpose, six Margate boatmen and the two Whitstable men were left on board.

With the rising tide the gale came on again with renewed fury, and it soon became a question not of saving the vessel, but of saving their own lives. The sea dashed furiously over the wreck, lifting her, and then letting her fall with terrific violence on the sands. Her timbers quivered and shook, and a hole was quickly knocked in her side. She filled with water, and settled on one side. "The waves began now to break with great force over the deck; the lugger's boat was speedily knocked to pieces and swept overboard; the hatches were forced up; and some of the cargo which floated on the deck was at once washed away. The brig began to roll and labour fearfully, as wave after wave broke against her, with a force that shook her from stem to stern, and threatened to throw her bodily upon her broadside; the men, fearing this, cut the weather rigging of the mainmast, and the mast soon broke off short with a great crash, and went over the side." All hands now had to take to the fore-rigging; nineteen souls with nothing between them and death but the few shrouds of a shaking mast! The waves threw up columns of foam, and the spray froze upon them as it fell. The Margate Whitstable men were caught in a trap, for neither lugger nor smack would have lived more than a few minutes in the sea that surrounded the vessel. Would the life-boat come?

As soon as the news of the wreck reached Margate, the smaller of the two life-boats was manned and launched. By an oversight in the hurry of preparation, the valves of the air-tight boxes had been left open, and she was fast filling. Although she succeeded in getting within a quarter of a mile of the brig, she had to be speedily turned towards shore, or she would have been wrecked herself. After battling for four hours with the sea and gale, she was run ashore in Westgate Bay. There the coast-guardmen did their best for them. Meantime, when it was learned in Margate that the first boat was disabled, the larger one was launched. Away they started, the brave crew doing all they could to battle with the gale, but all in vain; their tiller gave way, and they had to give up the attempt. They were driven ashore about one mile from the town. Next, two luggers attempted to get out to the wreck. The fate of the first was soon settled: a fearful squall of wind struck her before she had got many hundred yards clear of the pier, and swept her foremast clean out of her. The second lugger was a little more fortunate; she beat out to the Sands, but only to find the surf so heavy, that it was impossible to cross them, or to get near the wreck. "The Margate people became full of despair; and many a bitter tear was shed for sympathy and for personal loss as they watched the wreck, and thought of the poor fellows perishing slowly before their eyes, apparently without any possibility of being saved." And now let us change the scene to Ramsgate.

About nine o'clock the news came to Ramsgate that there was a brig ashore on the Woolpack Sands, off Margate, but it was naturally concluded that the life-boats of the

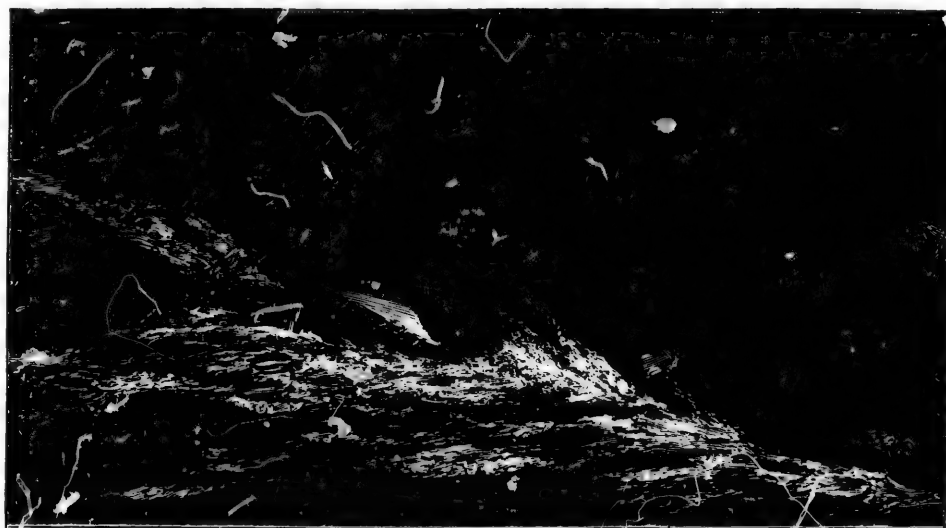
latter place would go to the rescue, and no one supposed that the services of the Ramsgate boat would be required. "But shortly after twelve, a constguard-man from Margate hastened breathless to the pier and to the harbour-master's office, saying, in answer to eager inquiries, as he hurried on, that the two Margate life-boats had been wrecked. The order was, of course, at once given, 'Man the life-boat!' and the boatmen rushed for it. First come, first in; not a moment's hesitation, not a thought of further clothing: they will go in as they are, rather than not go at all. The news rapidly spreads; each boatman as he heard it, hastily snatched up his bag of waterproof overalls and south-wester cap, and rushed down to the boat; and for some time, boatman after boatman was to be seen racing down the pier, hoping to find a place still vacant; if the race had been to save their lives, rather than to risk them, it would hardly have been more hotly contested.

"Some of those who had won the race and were in the boat were ill-prepared with clothing for the hardships they would have to endure, for if they had not their waterproofs at hand, they did not delay to get them, fearing that the crew might be made up before they got to the boat. But these men were supplied by the generosity of their disappointed friends, who had come down better prepared, but too late for the enterprise; the famous cork jackets were thrown into the boat and at once put on by the men.

"The powerful steam-tug, well-named the *Aid*, that belongs to the harbour, and has her steam up night and day ready for any emergency that may arise, speedily got her steam to full power, and with her brave and skilful master, Daniel Reading, in command, took the boat in tow, and together they made their way out of the harbour. James Hogben, who with Reading has been in many a wild scene of danger, was coxswain, and steered and commanded the life-boat.

"It was nearly low water at the time, but the force of the gale was such as to send a good deal of spray dashing over the pier; the snow fell in blinding squalls, and drifted and eddied in every protected nook and corner. It was hard work for the excited crowd of people who had assembled to see the life-boat start, to battle their way through the drifts and against the wind, snow, and foam, to the head of the pier; but there at last they gathered, and many a one felt his heart fail as the steamer and boat cleared the protection of the pier, and encountered the first rush of the wind and sea outside. 'She seemed to go out under water,' said one old fellow; 'I would not have gone out in her for the universe.' And those who did not know the heroism and determination that such scenes call forth in the breasts of the boatmen, could not help wondering much at the eagerness which had been displayed to get a place in the boat—and this although the hardy fellows knew that the two Margate life-boats had been wrecked in the attempt to get the short distance which separated the wreck from Margate, while they would have to battle their way through the gale for ten or twelve miles before they could get even in sight of the vessel." And so the steamer with its engines working full power plunged heavily along, the life-boat towed astern with fifty fathoms (300 feet) of five-inch hawser out, an enormously strong rope about the thickness of a man's wrist. The water flowed into and over the boat, and still, like any other good life-boat, she floated, and rose in its buoyancy, almost defying the great waves, while her crew were knee-deep in water.

They, making their way through the Cud channel, had passed between the black and white buoys, so well-known to Ramsgate visitors, when a fearful sea came heading towards them. It met and broke over the steamer, buried her in foam and then passed on. The life-boat rose to it, and for a moment hung with her bows high in air, then plunged bodily almost under water. The men were nearly washed out of her, for at that moment the tow rope broke, and the boat fell across the sea, which swept in rapid succession over her. "Oars out! oars out!" was the cry, but they could do nothing with them. The steamer was, however, cleverly brought within a few yards to windward of the boat, and a hauling line, to which was attached a new hawser, was successfully passed to the boat, and they again proceeded in the



RAMSGATE—THE "AID" GOING OUT.

teeth of the blinding snow and sleet and spray which swept over the boat, till the men looked, as one said at the time, "like a body of ice."

Still they struggled on, till they reached the North Foreland, where the sea was running mountains high, and although early in the afternoon, the air was so darkened by the storm that the captain of the boat could not see the steamer only a hundred yards ahead, and still less able were the men on board the steamer to see the life-boat. Now they sighted Margate, and could plainly see the two disabled life-boats ashore. But where was the wreck? A providential break in the drift of snow suddenly gave them a glimpse of it, and the master of the steamer made out the flag of distress flying in the rigging of the fated vessel. But she was on the other side of the sand, and to tow the boat round would take a long time in the face of such a gale; while for the boat to make across the sand seemed almost impossible. But although it seemed a forlorn hope, it was resolved to force her through the surf and sea under sail, and the hawser was cast off. Now a new complication arose. The tide was found to be running so furiously that they must be towed at least three miles to the eastward

before they would be sufficiently far to windward to make certain of fetching the wreck. The tow rope had to be got on board again, and it was a bitter disappointment to all, that an hour or more of their precious time must be consumed before they could possibly get to the rescue of their endangered brother seamen. The snow-squalls increased, and they lost sight of the wreck again and again. "The gale, which had been increasing since the morning, came on heavier than ever, and roared like thunder overhead, the sea was running so furiously and meeting the life-boat with such tremendous force that the men had to cling on their hardest not to be washed out of her, and at last the new tow rope could no longer resist the increasing strain, and suddenly parted with a tremendous jerk; there was no thought of picking up the cable again—they could stand no further delay, and one and all of her crew rejoiced to hear the captain of the life-boat give orders to set sail."

Straight for the breakers they made in the increasing gloom; no faltering or hesitation, brows knit, teeth clenched, hands ready, and hearts firm. The boat, carrying the smallest amount of sail possible, was driven on by the hurricane force of the wind, till she plunged through the outer range of the breakers into the battling, seething, boiling sea, that marked the treacherous shallows. "When they saw some huge breaker heading towards them like an advancing wall, then the men threw themselves breast down on the thwart, curled their legs under it, clasped it with all their force with both arms, held their breath hard, and clung on for very life against the tear and wrestle of the waves, while the rush of water poured over their backs and heads, and buried them in its flood. Down, down, beneath the weight of the water, the men and boat sank; but only for a moment; the splendid boat rose in her buoyancy, and freed herself of the seas, which for a moment had overcome her and buried her, and her crew breathed again; and a struggling cry of triumph rises from them, 'Well done, old boat! well done.'"

A sudden break in the storm, and the wreck is revealed to them half a mile to leeward. Her appearance made even these hardy men shudder. She had settled down by the stern, her uplifted bow being the only part of the hull that was to be seen, and the sea was making a clean breach over her. "The mainmast was gone, her foresail and foretopsail were blown adrift, and great columns of foam were mounting up, flying over her foremast and bow. They saw a Margate lugger lying at anchor just clear of the Sands, and made close to her. As they shot by they could just make out, amid the roar of the storm, a loud hail, 'Eight of our men on board!' and on they flew, and in a few minutes were in a sea that would instantly have swamped the lugger, noble and powerful boat though she was.

"Approaching the wreck, it was with terrible anxiety they strained their sight, trying to discover if there were still any men left in the tangled mass of rigging, over which the sea was breaking so furiously. By degrees they made them out. 'I see a man's head. Look! one is waving his arm.'—'I make out two! three! why, the rigging is full of the poor fellows;' and with a cheer of triumph, as being yet in time, the life-boat crew settled to their work." Four hours they had been battling the elements, while the shipwrecked crew had waited eight hours despairingly, within a few miles of shore, shivering in the rigging. The sails were lowered, and anchor cast overboard. "No cheering! no shouting in the boat now, no whisper beyond the necessary orders; the risk and suspense are too terrible! Yard by yard the cable is cautiously paid out, and the great rolling seas are allowed to carry the

boat, little by little, nearer to the vessel. The waves break over the boat, for the moment bury it, and then as the sea rushes on, and breaks upon the wreck, the spray, flying up, hides the men lashed to the rigging from the boatmen's sight. They hoist up a corner of the sail to let the boat sheer in; all are ready; a huge wave lifts them. 'Pay out the cable! sharp, men! sharp!' the coxswain shouts; 'belay all!' The cable was let go a few yards by the run, and the boat is alongside the wreck. With a cry, three men jump into the boat and are saved! 'All hands to the cable! haul in hand over hand, for your lives, men, quick!' the coxswain cries; for he sees a tremendous wave rushing in swiftly upon them. They haul in the cable, draw the boat a little from the wreck, the wave passes and breaks over the vessel; if the life-boat had been alongside she would have been dashed against the wreck, and perhaps capsized, or washed over, and utterly destroyed. Again the men watch the waves, and as they see a few smaller ones approaching, let the cable run again, and get alongside; this time they are able to remain a little longer by the vessel; and, one after another, thirteen of the shipwrecked men unlash themselves from the rigging and jump into the boat, when again they draw away from the vessel in all haste, and avoid threatened destruction." At last three Spaniards are left in the rigging; they seem nearly dead, and scarcely able to unlash themselves, and crawl down the shrouds. The boat must be placed dangerously near the vessel, and two of the life-boatmen must get on to the wreck and lift the men on board. They do it quietly, coolly, determinedly. The last one left is a poor little cabin-boy; he seems entangled in the rigging, and yet he holds fast to a canvas bag of trinkets and things he was taking as presents to the loved ones at home. "God only knows," says Gilmore, "whether the loved ones at home were thinking of and praying for him, and whether it was in answer to their prayers and those of many others that the life-boat then rode alongside that wreck, an ark of safety amid the raging seas.

"They shout, the boy lingers still, his half-dead hands cannot free the bag from the entangled rigging. A moment and all are lost; a boatman makes a spring, seizes the lad with a strong grasp, and tears him down the rigging into the boat—too late, too late; they cannot get away from the vessel; a tremendous wave rushes on: hold hard all, hold anchor! hold cable! give but a yard and all are lost. The boat lifts, is washed into the fore-rigging, the sea passes, and she settles down again upon an even keel. Thank God! If one stray rope of all the torn and tangled rigging of the vessel had caught the boat's rigging, or one of her spars—if the boat's keel or cork fenders had caught in the shattered gunwale, she would have turned over, and every man in her been shaken into the sea to speedy and certain death. Thank God! it is not so, and once more they are safe." Look at the boat now; thirteen of its own crew, eight of the Margate and Whitstable men, the captain, mate, eight seaman, and the boy, thirty-two souls in all. Will she be able to bring all this human freight safely to land? Their dangers are not yet over; in fact, to the poor Spaniards, the terrors of death have not yet passed away; for they know little of the grand properties of a first-class English life-boat.

Now come the difficulties of clearing the wreck. The anchor holds, and there is no thought of getting her up in such a gale and sea. The hatchet is passed forward; there is a moment's delay, a delay by which indeed all their lives are saved. Already one strand out of

the three of which the strong rope is composed is severed, when a fearful gust of wind sweeps by, the boat heels over almost on her side—a crash is heard, and the mast and sail are blown clean out of the boat! she is carried straight for the wreck; the cable is slack, they haul it in as fast as they can, but on they are carried swiftly, as it would seem to certain destruction. “Let them hit the wreck full, and the next wave must throw the boat bodily upon it, and all her crew will be swept at once into the sea; let them but touch the wreck, and the risk is fearful; on they are carried, the stem of the boat just grazes the bow of the vessel, they must be capsized by the bowsprit and entangled in the wreckage; some of the crew are ready for a spring into the bowsprit to prolong their lives a few minutes, the others are all steadily, eagerly, quietly, hauling in upon the cable might and main, as the only chance of safety to the boat and crew; one moment more and all are gone, one more haul upon the cable, a fathom or so comes in by the run, and at that moment mercifully taughtens and holds, all may yet be safe! another yard or two and the boat would have been dashed to pieces.” This danger over, they have to think of the mast and sail dragging over the side of the boat; it is with great difficulty that they get them on board, and rig them up once more. At last they sail away from the Sands, the breakers and the wreck.

And now for the steamer, which at length they reach, passing on the way the lugger *Eclipse* and the Whitstable smack, to the crews of which they were able to impart the good tidings. When they reached the steamer the sea was raging, and the gale blowing as much as ever, and it was no easy task to get the poor shipwrecked fellows on board, as they were too exhausted to spring up her sides as the opportunity occurred; and one poor fellow was literally hauled on board with a rope. The return voyage was little less dangerous than the voyage out, but at last the Ramsgate pier-head light shone out with its bright welcome, and cheers broke out from the anxious crowd, as it was known that nineteen men had been saved from a terrible and certain death. The Spanish sailors were well cared for, and their captain, in speaking of the rescue, was almost overcome by his feelings of gratitude and wonder, for he had made up his mind for death. He had a picture made of the rescue to take home with him to show the Spanish authorities. It is gratifying to know that so much bravery did not go unrewarded. The English Board of Control presented each of the men with £2 and a medal, while the Spanish Government gratefully acknowledged the heroic exertions put forth, by granting each a medal and £3. And all the above is but one example of the work of our “Storm Warriors,” whose glorious mission is to save.

One stormy night some years ago the *Aid* and the life-boat started from Ramsgate in answer to rockets fired from one of the Goodwin light-vessels. They knew well what it meant, but on reaching the edge of the Sands could not, after cruising about some distance, find any traces of a vessel in distress. They waited till daylight, and then were just able to distinguish the lower mast of a steamer standing out of the water. They made towards it, but found no trace of life, no signs of any floating wreck to which a human being could cling. They were forced to the conclusion that almost immediately upon striking, the vessel must have broken up and sunk in the quicksand. Poor crew! poor passengers, maybe! a sharp, sudden death! Would that the vessel could have held together a little longer!

They had not proceeded much farther ahead in the hopes of assisting another vessel ashore not far from Kingsgate, when the captain of the *Aid* saw a large life-buoy floating by. "Ease her!" he cries, and the way of the steamer slackens; "God knows but what that life-buoy may be of some use to us." The helmsman steers for it; a sailor makes a hasty dart at it with a boat-hook, misses it, and starts back appalled from a vision of staring eyes, and pale and agonised faces, matted hair, and arms outstretched for help. The life-boat crew steer for the buoy; the bowman grasps at it, but cannot lift it; his cry of horror startles the whole crew. Some of them hasten to help him. To that buoy three dead bodies were found lashed with ropes round their waists. Slowly and reverently, one by one, the crew lifted them on board, and laid them out under the sail. Those three pale corpses were all that were ever found of the crew and passengers—to what number is not known precisely to-day—of the steamer *Violet*, which had left Ostend late the previous evening. At two o'clock she struck the Sands; a little after three there was no one left on board to answer the signals of a steamboat that had come to their rescue, and show their position; a little later and the *Violet* was lying a worthless wreck below the breakers and quicksands.

Happily the efforts of the life-boat and steamer's men are almost invariably crowned with success, where such is anything like possible. A grand success was scored some years ago when the passengers and crew of a large emigrant ship, and the crew of another vessel, one hundred and twenty in all, were rescued and brought into Ramsgate as the result of one long night's work. The first ship, the *Fusilier*, was found hard and fast on the Sands, in a perfect boil of waters, and the life-boat alone dare approach her, the *Aid* being obliged to lay off at some distance. The terrified passengers looked down upon the life-boat from the high ship's deck, which quivered with every thump on the sands, wondering how many she could possibly save, and despairingly crowding round the two life-boat's men who had sprung to the man-ropes when the boat had been lifted by a sea close to the wreck. The lights from the ship's lamps and the faint moonlight revealed a trembling, pale, and horror-stricken crowd, nine-tenths of whom had known nothing before of the terrors of the sea, and who still despaired of ever seeing land again. But every one of them, and the list included more than sixty women and children, were saved. The women and children were taken off first, helped down by sailors slung in bowlines over the vessel's side, to the plunging, restless boat, the dangers being greatly enhanced by the helplessness and frantic terror of the poor creatures. Yet not even a baby was lost, although many were thrown from the vessel to the outstretched arms of the life-boat men. About thirty persons were conveyed at a time to the steamer, where the difficulties of transference were nearly as great as from the wreck, but at last all were safe on board. Then, as the heavily-freighted steamer turned her head for Ramsgate, the emigrants mentioned how, during the previous night, they had seen a large ship drifting fast for the Sands, and how in the darkness they had lost sight of her. A sharp look-out was therefore kept, and as they proceeded down Prince's Channel, and neared the lightship, their search was rewarded. They noted the remnants of a wreck well over on the north-east side of the Girdler Sands, and immediately put back for the life-boat, which had been left alongside the emigrant ship, where the captain remained in the

faint hope of saving her eventually. Both put back to the second wreck, the hull of which was almost torn to pieces, the timbers started, rent, and twisted—a mere skeleton of a ship. To the foremast—hardly held in position by a remnant of shattered deck—clung sixteen of an exhausted crew, including a pilot and a boy of eleven. But a rope was successfully thrown round the fore-rigging, and slowly, one by one, the poor fellows dropped from the mast to the boat. Then “oars out,” lest a hole should be knocked through the boat’s bottom by some part of the wreckage, and every rower strained his utmost to get clear of her. This done, and the sail hoisted, the steamer was soon reached, and a grand night’s work consummated. One can imagine the keen interest of the emigrants watching from the steamer the rescue of men from dangers similar to, but even greater than, those through which they had themselves just passed, and the enthusiasm ashore, at an almost unparalleled example of successful life-boat work.

CHAPTER XVII.

“MAN THE LIFE-BOAT!” (*continued*).

A Portuguese Brig on the Sands—Futile Attempts to get her off—Sudden Break-up—Great Danger to the Life-boat—Great Probability of being Crushed—An Old Boatman’s Feelings—The Life-boat herself on the Goodwin—Safe at Last—Gratitude of the Portuguese Crew—A Blaze of Light seen from Deal—Fatal Delay—Twenty-eight Lives Lost—A Dark December Night—The almost-deserted Wreck of the *Providentia*—A Plucky Captain—An Awful Episode—The Mate beaten to Death—Hardly saved—The poor little Cabin-boy’s Rescue—Another Wreck on the Sands—Many Attempts to rescue the Crew—Determination of the Boatmen—Victory or Death!—The *Aid* Steamer nearly wrecked—A novel and successful Experiment—Anchoring on Board—The Crew Saved.

THE emigrant ship mentioned in the preceding chapter was eventually got off the Sands; but although similar efforts are often made, they are by no means usually attended by similar results. The danger of waiting by the ship is very considerable. Gilmore gives us a good example of this in his account of a Portuguese brig on the Sands, of which there were, at first, strong hopes of saving. Her masts and rigging, as at first seen by the Ramsgate men, were all right, and her clean new copper was intact. “A grand thing for all hands—for owners, underwriters, crew, and boatmen—the men think, if they can only get her safely off when the tide rises, and bring her into harbour; a fine vessel and perhaps valuable cargo saved, and a pretty piece of salvage, which will be well earned, and nobody should grudge, for the boatmen have to live, as well as to save life.” The captain had at first refused to employ the services offered by the crews of two Broadstairs luggers, but at last was glad to avail himself of their assistance, coupled with that of the life-boat men and the steam-tug *Aid*. The boatmen got an anchor out astern as quickly as possible, the vessel being head on to the Sands, and used other means to assist the steamer’s work. They hoped that the *Aid* would be able to back close enough to them, to get a rope on board fastened to the flukes of the brig’s anchor, and to drag the anchor out, and drop it about one hundred fathoms astern of the vessel. All hands would then have gone to the windlass, keeping a strain upon

the cable, and, each time the vessel lifted, heaved with a will—the steamer, with a hundred and twenty fathoms of nine-inch cable out, towing hard all the time. By these means they expected to be able gradually to work the vessel off the Sands. But they soon lost hope of doing this. The gale freshened about one o'clock in the morning; the heavy waves rolled in over the sands, and she lifted and fell with shocks that made the masts tremble and the decks gape open. The life-boat remained alongside, afloat in the basin that the brig had worked in the sands, and it took all the efforts of the men on board to prevent her getting under the side of the vessel, and being crushed. The Portuguese captain still refused to desert his vessel, while the boatmen, who knew the danger, were almost ready to force the crew to leave the ship.

Suddenly a loud sharp crack, like a crash of thunder, pealed through the ship. One of her large timbers had snapped like a pipe-stem, and now the Portuguese sailors were only too anxious to leave. Even then, however, they made a rush to get their things, and soon eight sea-chests hampered the life-boat. The captain did not like to refuse the poor fellows, although every moment was of consequence. The surf flew over the brig, and boiled up all around her; the life-boat, deluged with spray, had all her lights washed out. The snapping and rending of the brig's timbers was heard over the fury of the storm; she was breaking up fast. The boy was handed to the boat, the sailors following, and the brig was abandoned. But the danger was far from over.

The steamer and the luggers, exposed to the full fury of the increasing gale, were outside, the former head to wind, steaming half-power. The steamer endeavoured to keep in the neighbourhood of the wreck and of the life-boat. One of the luggers had to cut her cable, without attempting to save her anchor, and make with all speed for Ramsgate; the second sprung her mast, which was fished with great difficulty, and she too made the best of her way for the harbour. The crew of the steamer could see nothing of the boat—Was she swamped or stove, and all lost? They made signals, but to no purpose; and the *Aid* cruised up and down the edge of the dangerous sands as near as might be, hoping against hope. The night was pitchy dark, and the storm remained at its worst. Through the thick darkness the bright light of the Goodwin light-vessel shone out like a star. With a faint hope, the crew of the steamer wrestled their way through the storm, and spoke the light-ship. Nothing had been seen of the life-boat. They hastened to their old cruising-ground. How they longed for the light! All hands were still on watch, and as the faint grey light of dawning came, they sought with straining eyeballs to penetrate the twilight, and find some sign of their lost comrades. It was almost broad daylight before they could find the place where the wreck was lying, and when they discovered it, lost all hope, for the brig was found completely broken up, actually torn to pieces. They could see great masses of splintered timber and tangled rigging, but not a sign of life. Sadly they turned from the fatal Goodwin, and made for the harbour.

To return to the life-boat, afloat within the circle of the bed worked by the brig in her wild careering. She could not by any possibility leave, though the wreck threatened to roll over her every moment, for outside were the shallow sands, and she was grounding every few moments. "Crash! the brig heaves, and crushes down upon her bilge; again and

again," says the narrator, "she half lifts upon an even keel, and rolls and lurches from side to side; each time that she falls to leeward she comes more and more over, and nearer to the boat.

"This is the danger that may well make the stoutest heart quail. The boat is aground—helplessly aground; her crew can see through the darkness of the night the yards and masts of the brig swaying over their heads, now tossing high in the air as the brig rights, and now falling nearer and nearer to them, sweeping down over their heads, swaying and rending in the air, the blocks, and ropes, and torn fragments of sails flying wildly in all directions. Let but one of the swaying yards hit the boat, she must be crushed, and all lost. The men crouch down closer and closer, clinging to the thwarts as the brig falls to them, casting dread glances at the approaching yards; all right once more; another pull at the cable—hard, men, hard; over again comes the brig; stick to it, stick to it, my men; crushed or drowned, it will be soon over if we cannot move the boat; another pull, all together; again and again they make desperate efforts to stir the boat, but she will not move one inch; they must wait, and, if needs be, wait their doom." And so through hours of fearful suspense, half dead with cold and the ceaseless rush of surf over them, watching in the shadowy darkness the swaying masts and flying blocks, expecting each moment to be their last.

But at length a dawn of hope arrived; the boat lifted on the swell of the tide that was beginning to reach her, and though she immediately grounded again, the men knew that all was not lost. After desperate hauling on the cable they at last were able to ride to their anchor a few yards clear of the brig. But to get away from the sand in the face of the fierce gale and tide was impossible, and so there was no alternative, they must beat right across the sands, and this in the wild fearful gale, and terrible sea, and pitch-dark night. Breaker after breaker rushed furiously towards and over them; the men were nearly washed out of the boat; and, worse, the anchor began to drag, and every moment they drifted nearer to the wreck again. There might now be water enough to take them clear; at all events, they must risk it. The foresail was hoisted and the cable cut, and she leaped forward, but only for a few yards, when she grounded upon the sands again with a terrible shock, and again within reach of the brig. Huge breakers came tearing along, and, at last, after many such experiences, they were once more clear of the wreck. Then another danger arose. A small life-boat belonging to the Broadstairs men had been in tow all this time, and when the Ramsgate boat grounded she came crashing along into her. The Ramsgate men had, in the midst of the boiling sea, to fend her off with their feet, and at last cut her adrift. The sea-chests of the Portuguese sailors—or at least those not already washed away—were thrown overboard. Again and again she grounded on the sand ridges washed up by the surf—ridges giant editions of the little sand-ripples on the sea-shore so well remembered by all visitors to our coasts, but two and three feet high, instead of as many inches.

"One old boatman," says Gilmore, "afterwards thus described his feelings:—'Well, sir, perhaps my friends were right when they said I hadn't ought to have gone out—that I was too old for that sort of work' (he was then about sixty years of age), 'but, you see, when there is life to be saved, it makes one feel young again; and I've

always felt I had a call to save life when I could, and I wasn't going to hang back then. And I stood it better than some of them, after all. I did my work on board the brig, and when she was so near falling over us, and when the *Dreadnought* life-boat seemed knocking our bottom out, I got on as well as any of them; but when we got to beating and grubbing over the sands, swinging round and round, and grounding every few yards with a jerk that bruised us sadly, and almost tore our arms out from the sockets; no sooner washed off one ridge, and beginning to hope that the boat was clear, than she thumped upon another harder than ever, and all the time the wash of the surf nearly carrying us out of the boat—it was truly almost too much for any man to stand. There was a young fellow holding on next to me; I saw his head begin to drop, and that he was getting faint, and going to give over; and when the boat filled with water, and the waves went over his head, he scarcely cared to struggle free. I tried to cheer him a bit, and keep his spirits up. He just clung to the thwart like a drowning man. Poor fellow! he never did a day's work after that night, and died in a few months.' And then the old man described how he took his life-belt off, that he might have it over all the quicker; how the captain cheered them up by crying out, 'We'll see Ramsgate yet again, my men, if we steer clear of old wrecks;' and how he was going off into a kind of stupor when the clouds broke a little, and one bright star shone out, a star of life and hope to him. For seven whole days after the poor old man reached shore he lost his speech, and lay like a log on his bed, while all the men were considerably shaken. 'I cannot describe it,' said he, 'and you cannot, neither can any one else; but when you say you've beat and thumped over those sands, almost yard by yard, in a fearful storm on a winter's night, and live to tell the tale, why it seems to me about the next thing to saying that you've been dead, and brought to life again.'"

But suddenly the swinging and beating of the boat ceased: she was in a heavy sea, but in deep water, and she answered her helm. The crew soon got more sail on her, and she made good way before the gale. Even the Portuguese sailors lifted their heads. They had been clinging together and to the boat, crouching down under the lee of the foresail, utterly despairing of life; now their joy knew no bounds. They were noticed earnestly consulting together. They had lost their kits, and only possessed the clothes they stood in and a few pounds in money (about £17) between them, but the latter they determined to present to the crew. "I, for one, won't touch any of it," said the coxswain of the boat. "Nor I!" "Nor I!" all added; "put your money up." And so to the harbour, where their consul took care of them. When the steamer arrived later on, what was not the surprise and delight of the captain and all hands to find the life-boat at her old moorings, and their comrades in so many dangers all safe in port!

For by far the larger proportion if not indeed nearly the whole of these life-savers work *con amore*, and a mishap or positive disaster is often to them an agonising disappointment. One stormy New Year's Eve some years ago "a ship was seen off Deal beach in almost a blaze of light, burning tar-barrels and firing rockets, to tell of her distress; an intervening fog seemed to prevent the look-out on board the light-vessel seeing her, and some boatmen on Deal beach, who could not possibly get their boats off the sands in the face of the strong gale blowing straight on shore, put their halfpence together to pay for a telegraph message—the

messages were dearer then than they are now—and sent their swiftest runner to telegraph to Ramsgate; and, after all, there was some unfortunate mistake, and fatal delay, and a telegram at last sent for further particulars, which was answered with a demand for urgent speed, and away then flew steamer and life-boat, and they neared the wreck, and rounded to, to send the life-boat in, when some of the boatmen thought they heard an agonising shriek, and others thought it was only the wail of the storm; but they looked, and the great green seas swept over the wreck, turned her right over, and she was seen



A GROUP OF LIFE-BOAT MEN.

no more, and twenty-eight lives went to their account. A piteous New Year's tale it was that was told next morning. A boat's crew got away from the ship soon after she struck, and, battling through the broken seas, made way before the wind to Dover, and they told the story that the lost vessel had picked up a shipwrecked crew, who were thus a second time wrecked, and at the second time lost; and that more of the crew would have come away in the boat, and in other boats, but it was a great risk; and there was a Deal pilot on board, who pointed out the danger, and said that the Ramsgate life-boat was sure to be out to their rescue, they might be sure of her; and so they stayed and lighted tar-barrel after tar-barrel, and fired rocket after rocket; and when the sea washed their signal-fires out and swept the decks, they took to the rigging, and waited for the life-boat; and as they waited, the poor Deal pilot could watch the light on the

beach, by the house where slept his wife and eight children, who were to call him husband—father—no more.” The life-boat men hardly like to speak of such a cruel disaster—blameless though they be in the matter. In this particular case a Board of Trade inquiry acquitted them and all else concerned of any blame whatever.

A dark December night, and a large ship reported ashore on the Goodwins. The harbour-master hurries to Ramsgate pier-head; he and all with him can see nothing; they cross-question the man who asserts that he observed during a lift in the fog a vessel on the sands. Although there is no signal from the light-vessels, the harbour-master decides to send out steamer and life-boat. The crews of both soon discover the vessel looming through the mist, a complete wreck, her bow to the sea, her mizen-mast down to the deck, and the wild seas running over her. There are no sailors to be seen lashed in her rigging. Have all on board perished?

Thank God! not so. After infinite difficulty, and after nearly getting entangled with some of the wreckage, the life-boat crew get near the vessel, and find that three men and a boy are crouching under the shelter of the deck-house; they must be a small proportion of the original crew, for she is a large ship, and must have had some fifteen or sixteen hands aboard. The men have been crouching there for hours, and their confidence in the advent of the life-boat had been so strong that they had prepared for her coming by preparing a life-buoy, with a long line fastened to it, ready to throw overboard.

As the long hours passed, fervent hope had been dashed by wild despair. Suddenly the life-boat appears, coming up to her cable just astern of the vessel; it is to them as a reprieve from death, and they wake to life and action. They throw the life-buoy and line to the life-boat men, and after much trouble the latter get it on board. All hands lay hold on the rope, and do their utmost to haul the life-boat nearer to the wreck, but the heavy gale, terrific sea, and strong tide, render it impossible. A tremendous sea comes rushing over the vessel, and for the moment swamps the boat, knocking down five or six of the men, hurting some of them severely, but she lifts again, and no one is lost. But what of the poor crew? The life-boat men feel that it is impossible to haul their boat nearer the ship.

“To their great surprise, they see the captain spring up from the lee of the deck-house, hurriedly take off his oilskin coat, throw it into the water, and then, jumping on the gunwale, grasp the hawser that holds the boat, and slide down into the boiling sea. A huge wave breaks over him and washes him away from the rope; he now tries to swim to the boat, but the life-boat is not directly astern—the sheer she has to her cable that is fastened to the anchor, which was thrown over some distance to the side of the vessel, prevents her dropping right astern; and although the captain has but to swim a few yards out of the direction of the sweep of sea and tide, it is impossible for him to manage it. He is perfectly overwhelmed by the boil of sea, tossed wildly up and down, wave after wave beating over him: it is all that he can do to keep his head above water, and cannot guide his course in the least; the boatmen try all they can to make the boat sheer towards him, so as to reach him or throw him a rope, but it is impossible: they cannot get sufficiently near, and in a few seconds they see him swept

rapidly by in the swift tide. Jarman, the coxswain of the boat, seizes a life-buoy, and throws it with all his force towards him; the wind catches it, and helps the throw; it falls near him; he makes a spring forward and reaches it; the men gladly see that he has got it; they see him put his two hands upon one side, as if to get upon it; as he leans forward it falls over his head like a hoop; he gets his arms through it, and shouting to the boatmen, 'All right!' he waves his hand as if to beckon them to follow him, and goes floating down in the strong tide and among the raging, leaping seas, in a strange wild dance, that threatens indeed to be a dance of death." With terror and dismay they watch him in his fearful struggle, till he is lost to their view, quite out of sight among the waves; they could not follow him, however much they might have wished it, for it might be hours before they could get back to the ship, and the two men and boy still aboard.

And had they thought of so doing the next episode would have obliged them to desist. A tremendous crash startles them all; the mainmast has fallen over the port side of the vessel. The men on board give a loud cry; the chief mate springs wildly to the starboard quarter, and, making the end of the mainbrace hanging there fast round his waist, drops into the sea. He is a powerful swimmer; but what can he do in a tide and sea so tremendous that twelve strong men cannot haul the boat one foot against them? And so a fearful tragedy is worked out before their very eyes. Now he is buried in a sea; now he is thrown high in the air on the crest of a wave, but he never nears the boat, nor can it near him. He strikes out wildly, as if to make a last effort, and cries aloud in his agony and despair. They try again and again to throw the lead-line over the rope which holds the poor fellow, but the boat is pitching and tossing so much that their efforts are all in vain. "'Now he rises on a wave; now try; heave with a will, well clear of his head. Ah! missed again; look out; hold on all!'" A wave rushes over them, boat and all; another half minute, and they make another attempt. No! all in vain, each time it falls short. The struggle cannot last long; strong and young as the man is, his strength cannot possibly endure long in such a conflict; his cries grow more feeble, and soon cease; they see him try and get back to the ship, climbing up the rope, but his strength fails, and he falls back; his arms and legs are still tossed wildly about, but it is by the action of the waves; his head drops and sinks; yes! it is all over!—all over with him!" Think of the second mate and cabin-boy on the wreck, watching in helpless horror the death they could not avert, and which may be theirs in a few moments!

The deck-house under which they have been crouching is beginning to break up, and the remaining man, throwing himself on the rope by which the life-boat is made fast to the ship, attempts to reach the boat. The breakers rush over him as he painfully struggles on, and he is again and again buried in the waves. At last he reaches the high bow of the life-boat, which is leaping and falling and jerking, tearing the hawser up and down in the seas, as if trying to throw him from his hold. His hands convulsively clutch the rope; pale, and with jaw dropping, he seems about to swoon, and in another moment he will be gone. "The man in the bow of the boat has been watching his every movement, has shuddered with dismay as he saw the seas wash over

him, expecting him to be carried away in the strong tide. No; he still grasps the rope, and at last is within reach! In one spring, and with a cry to his mates, 'Hold me! hold me!' the boatman throws himself upon the raised fore-deck of the life-boat, and, with his body half-stretched over the stern, he grasps the collar of the sailor. The drowning man throws his arm around the boatman's neck, and clings to him convulsively, by his weight dragging the man's head down and burying it in the water; but the brave fellow clings as hard to the half-dead sailor as the sailor does to him; the seas wash bodily over them and over the bow of the boat; up and down the boat plunges



ON THE COAST AT DEAL.

them both, but he still holds on; three or four of the boatmen have hold of his legs, and are doing their utmost to pull him back into the boat, but they cannot do so; and so the struggle goes on: it is only as the boat rises on a wave and throws her bow up in the air that the men can breathe." And now a new horror, for right down upon them comes the wreck of one of the ship's largest boats, which has just got free of the wreckage. Thank God! it just passes clear of them. The boatmen cannot get the men in over the high bow of the boat, and the two poor fellows are drowning fast, and so they drag them along the side of the boat, still clinging together, to the waist of the boat, where the gunwale is very low, and with more assistance succeed in getting them aboard.

And now for the poor boy, still clinging to the gunwale, and crying out in piteous

tones. Each moment, as the waves dash over the vessel, the boatmen expect to see him washed overboard like a cork. What can be done? No one can mount the rope in the face of the seas and tide which had really helped the poor fellow now safely on the boat. There seems no hope of taking him off by any means whatever, but the coxswain determines to haul the boat up to the ship sharply, and attempt it. Scarcely are the orders given, when some of the men give a cry, "'What's that? look out!' Yes, he is overboard, washed over by that big sea. 'Where is he? where is he? There he is! No; only his cap! there he lifts on that sea—he is coming straight for the boat!' From the change and eddy of the tide, the rush of the sea past the boat is not nearly so rapid as it was, and the poor boy comes floating slowly from the ship; once or twice he has been rolled under by the waves, now he is on the surface again, and near the boat. 'Here he comes! look! on that wave! Lost! No, he floats again! Slacken hawsers! Now he is within reach! Carefully, quick! Now you have got him! He is making no effort, and floating with his head under water!' A boatman manages to hook his jacket with a long boat-hook, and pulls him towards the boat; gently the men lift him in, sorrowfully, and tears are in the eyes of more than one as they look upon the small face. 'Poor little chap! Too late! too late! he's gone!'" Their efforts are now all needed to get clear of the wreck, cut the cable, and raise the sail, all which being done successfully, they go off smartly before the wind, and have time to look to the poor boy again. Kind hands chafe his hands and rub his back and limbs, and put a little rum to his lips, and after about half an hour they have the joy of seeing him show signs of life, and their efforts are redoubled. Some of the men take the driest of their jackets and wrap him up tenderly, lying him under the mizen-sail. He eventually recovers.

But, strangest part of all this eventful story, the captain, who had been two hours in the seething waters, is picked up alive, although, it may well be believed, in a terrible state of exhaustion. At first he seems to be dying, but at length, after the men have done their best in chafing and rubbing, he gets a little better, and is able to tell them that his vessel, the *Providentia*, was a full-rigged ship from Finland, and that he himself is a Russian Fin, which accounts for his miraculous preservation in the water, as the Fins are the hardiest of sailors. Eleven of his men had left the ship in their best boat, and were, it was eventually found, blown over to Boulogne.

The waves are rolling along in all their fury, and beat down upon the sands with tremendous force, and among them, and settled down somewhat, is a large barque. The life-boat men look at the awful rage of sea, and say to each other, "We have indeed our work cut out for us." There are no signs of life on board the wreck, but the flag of distress is still flying, and the steamer tows the boat nearer to her. Then the crew is discovered crouching in the shelter of the deck-house, while the huge waves make a complete breach over the vessel, threatening to wash away both house and crew. The steamer takes the boat to windward and lets her go. The boat's sail is hoisted, and she makes for the wreck. A minute more and they are in the broken water, the seas falling in tangled volumes over the boat, and she is tossed in all directions by the wild broken waves. She fills again and again, and the men have to cling with all their strength to the thwarts; but still the wind drives the boat on, and they get within about sixty yards

of the wreck, when the anchor is thrown out and the cable paid out swiftly. The men shout out, to encourage the poor trembling wretches on board, and, just as they expect to make a first successful rescue of a part of them, are nearly swamped by a fearful wave, which carries them a hundred yards away. They prepare for another attempt, hoist the sail, and try to sheer her to the vessel, but all their efforts are in vain. Wave after wave breaks over them, and the boat is tossed in all directions by the broken seas. Sometimes the coxswain feels as if he would be thrown bodily forward on the men, as the waves almost lift the boat end on end. They must give it up for this time; the very oars are blown from the row-locks and out of the men's hands. Again and again they are baulked in their efforts to reach the ill-starred vessel. Yet again and again they cheer, to keep up the spirits of its half-drowned and frozen crew.

The ship's hull has now been under water for some time, and is breaking up fast. On board the *Aid* the mortar apparatus is got ready, in the hope of getting near enough to the vessel to fire a line into her rigging. "Cautiously the steamer approaches; the tide has been for some time rising fast; the steamer does not draw much water; they are almost within firing distance; the waves come rushing along and nearly overrun the steamer; at last a breaker, larger than the rest, catches her, lifts her high upon its crest, and letting her fall down into its trough as down the side of a well, she strikes the sands heavily; the engines are instantly reversed; she lifts with the next wave, and being a very quick and handy boat, at once moves astern before she can thump again, and they are saved from shipwreck; and thus the fifth effort to save the shipwrecked crew fails." No time is lost; at once the steamer heads for the life-boat, and makes ready to again tow her into position for a fresh attempt. The masts of the wreck are quivering, and it is evident that she is breaking up fast.

The life-boat men consult together as to the plan of their next effort. At last one of the men proposes a mode, most assuredly novel, and which must, indeed, either prove rescue to the shipwrecked or death to all. "I'll tell you what, my men, if we are going to save those poor fellows, there is only one way of doing it: it must be a case of save all or lose all, that is just it! We must go in upon the vessel straight, hit her between the masts, and throw our anchor over right upon her decks." This is, almost naturally, derided by some as a hair-brained trick. Let us see the result.

"Once more the boat heads for the wreck—this time to do or to die; each man knows it, each man feels it. They are crossing the stern of the vessel. 'Look at that breaker! Look at that breaker! Hold on! hold on! It will be all over with us if it catches us; we shall be thrown high into the masts of the vessel, and shaken out into the sea in a moment! Hold on all, hold on! Now it comes! No, thank God! it breaks ahead of us, and we have escaped. Now, men, be ready, be ready!' Thus shouts the coxswain. Every man is at his station; some with the ropes in hand ready to lower the sails, others by the anchor, prepared to throw it overboard at the right moment; round, past the stern of the vessel, the boat flies, round in the blast of the gale and the swell of the sea; down helm; round she comes; down foresail; the ship's lee gunwale is under water; the boat shoots forward straight for the wreck, and hits the lee rail with a shock that almost throws all the men from their posts, and then, still forward, she literally leaps on

board the wreck. Over! over with the anchor. It falls on the vessel's deck. All the crew of the vessel are in the mizen shrouds, but they cannot get to the boat: a fearful rush of sea is chasing over the vessel, and between them and it. Again and again the boat thumps on the wreck as on a rock, with a shock that almost shakes the men from their hold." The waves carry her off, but the anchor holds, and they manage to haul on board another line. Again and again the boat washes away, but comes up to the vessel again; and, one by one, ten poor Danes are got on board. One sailor jumps from the rigging; the boat sinks in the trough of the sea, and he falls between her and the wreck; a second, and he would be crushed; two boatmen seize him, and are themselves seized by their companions, or they would go overboard.

The long battle was over; was it not one worth fighting? So thought the King of Denmark, who sent two hundred rix-dollars to be divided among the men, who were also rewarded by the Board of Trade. The boatmen are poor men, and such presents come in very acceptably; but their greatest satisfaction must ever come from the memory of their own brave deeds.

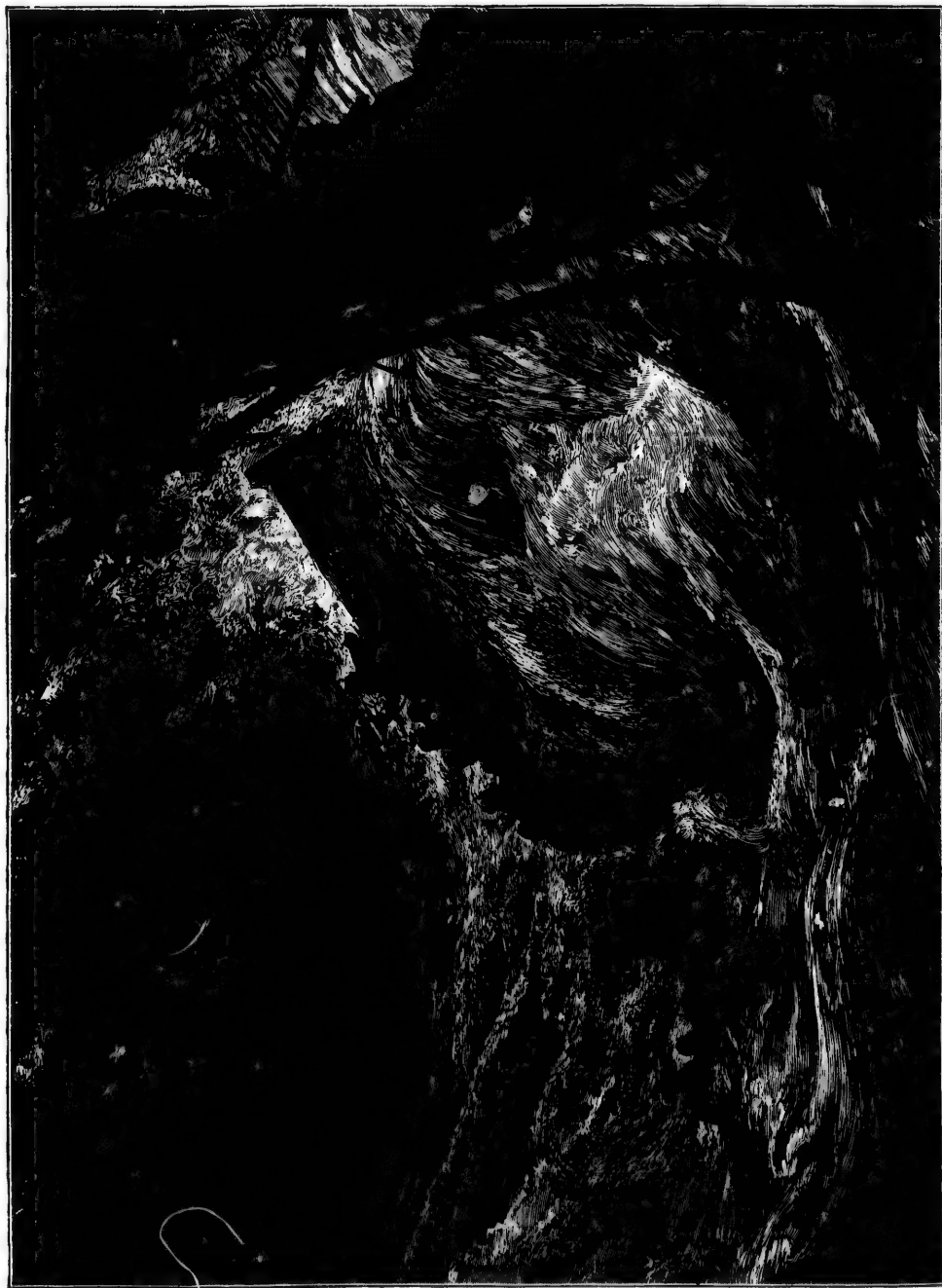
CHAPTER XVIII.

"WRECKING" AS A PROFESSION.

Probable Fate of a rich Vessel in the Middle Ages—Maritime Laws of the Period—The King's Privileges—Cœur de Lion and his Enactments—The Rôles d'Oleron—False Pilots and Wicked Lords—Stringent Laws of George II.—The Homeward-bound Vessel—Plotting Wreckers—Lured Ashore—"Dead Men Tell no Tales"—A Series of Facts—Brutality to a Captain and his Wife—Fate of a Plunderer—Defence of a Ship against Hundreds of Wreckers—Another Example—Ship Boarded by Peasantry—Police Attacked by Thousands—Cavalry Charge the Wreckers—Hundreds of Drunken Plunderers—A Curious Tract of the Last Century—A Professional Wrecker's Arguments—A Candid Bahama Pilot.

THE great historian, Hallam, says: "In the thirteenth and fourteenth centuries a rich vessel was never secure from attack, and neither restitution nor punishment of the criminals was to be obtained from Government, who sometimes feared the plunderer, and sometimes connived at the offence." As we have seen before, some of the greatest names of the Elizabethan and later days were often not much better than legalised pirates. But the poor sailors and owners were not merely the prey of these sea wolves; there were then and for centuries afterwards, nearly to our own days, "land-rats" ashore, who were to the pirates what sneak-thieves were to the highwaymen of romance. Those "good old days," when "wrecking" was considered a legitimate pursuit!

In preceding chapters the maritime laws and customs of successive ages have been briefly traced. Piracy was almost openly recognised in the thirteenth and fourteenth centuries, and a foreign ship with a rich cargo was too often regarded as rightful prey. There was a constant petty warfare between maritime nations, and frequently even between towns of the same nation. Thus, in the year 1254 some Winchelsea mariners attacked a Yarmouth vessel, and killed some of her crew.



RESCUE OF THE DANISH VESSEL.

Prior to the reign of Henry I. *all* wrecked property belonged to the king. Whether it was found necessary to make the king the owner of wreckage, in order to lessen the temptation to wreck vessels and murder the crews—no unfrequent occurrence, even in the last century—or “however it was,” says Gilmore, “the law existed, and the shipwrecked merchant might come struggling ashore upon a broken spar, and find the coast strewn with scattered but still valuable goods so lately his, but now by law his no longer any more than they belonged to the half-dozen rude fishermen who stood watching the torn wreck and dispersed cargo being wave-lifted high upon the beach.” Henry I. decreed that neither wreck nor cargo should become the property of the Crown if any man of the crew escaped with life to shore. It is to be feared that this well-meant law led to many a heartless murder. His successor expanded the law to the extent that if even a beast came ashore alive, the wreck and goods should belong to the original owners. Even the proverbial cat with nine lives might thus save a vessel.

Richard Cœur de Lion, always truly chivalrous, would have nought to do with plundering the plundered, and he decreed “that all persons escaping alive from a wreck should retain their goods; that wreck or wreckage should only be considered the property of the king when neither an owner nor the heir of a late owner could be found for it.” Some authorities will not couple the name of Richard with the “Rôles d’Oleron,” but it is certain that they were first promulgated in or about his time. They afford us some idea of the terrible system of wrecking then prevalent; such laws would not have been promulgated without good reason. Note their stringency.

“An accursed custom prevailing in some parts; inasmuch as a third or fourth part of the wrecks that come ashore belong to the lord of the manor where the wrecks take place, and that pilots, for profit from these lords and from the wrecks, like faithless and treacherous villains, do purposely run the ships under their care upon the rocks,” the law declares “that all false pilots shall suffer a most rigorous and merciless death, and be hung on high gibbets;” while “the wicked lords are to be tied to a post in the middle of their own houses, which shall be set on fire at all four corners, and burnt, with all that shall be therein, the goods being first confiscated for the benefit of the persons injured, and the site of the houses shall be converted into places for the sale of hogs and swine.” And again, “If people, more barbarous, cruel, and inhuman than mad dogs, murdered shipwrecked folk, they were to be plunged into the sea until half dead, and then drawn out and stoned to death.” The pilot who negligently caused shipwreck was to make good the losses or lose his head; but the master and sailors were, as a saving clause (principally for the owners!), to be persuaded that he had not the means to make good the loss *before they cut off his head.*

And so, without much change, the laws stood till the reign of George II.; and, alas! it does not seem that human nature, on our coasts at least, had greatly improved, for otherwise there would hardly have been necessity for a new Act, bristling with threats. The preamble states:—“That notwithstanding the good and salutary laws now in being against plundering and destroying vessels in distress, and against taking away shipwrecked, lost, and stranded goods, that still many wicked enormities had been committed, to the disgrace of the nation;” and it was therefore enacted that death should be the

punishment for hanging out false lights to lure vessels to their destruction; death for those who killed shipwrecked persons; and death for stealing cargo or wreckage, whether any one on board remained alive or not.

Every now and again some fearful tragedy, reported in our ever-vigilant press, opens our eyes to the possibilities of human degradation and depravity; but, in spite of all, thank God! these examples are few and far between. Does this not tend, at least, to show that the world now-a-days *is* better and kinder, and, in a word, more Christian-like, than in former days? Let the reader think—aye, and ponder, and think again—over the preceding paragraph. Could men—aye, and women too—assist not merely in robbery and plunder, but in first causing the wreck, and then, to cover up all, in murdering the few poor survivors? A writer from whom we have already quoted says:—

“Imagine a homeward-bound vessel, some two hundred and fifty years ago, clumsy in build, awkward in rig, little fitted for battling with the gales of our stormy coast, but yet manned with strong, stout-hearted men, who made their sturdy courage compensate for deficiency of other means; think of many perils overcome, a long weary voyage nearly ended, the crew rejoicing in thoughts of home, of home-love and home-rest, the headlands of dear Old England—loved by her sons no less then than now—lying a dark line upon the horizon, the night growing apace, the breeze freshening, ever freshening, adding each moment a hoarser swell to the deep murmurs of its swift-following blasts, the ship scudding on, breasting the seas with her bluff bows, rising and pitching with the running waves, which cover her with foam!

“Look on land! Keen eyes have watched the signs of the coming storm; men, more greedy than the foulest vulture, ‘more inhuman than mad dogs,’ have cast most cruel and wistful glances seaward! Yes, their eyes light up with the very light of hell as they see in the dim distance the white sail of a struggling ship making towards the land!

“And now try to imagine the scene as the night falls and the storm gathers. Two or three ill-looking fellows drop in, say, to a low tavern standing in a bye-lane that leads from the cliff to the beach in some village on our south-western coast. Soon muttered hints take form, and in low whispers the men talk over the chances of a wreck this wild night. They remember former gains; they talk over disappointments, when, on similar nights of darkness, wildness, and storm, vessels discovered their danger too soon for them, and managed to weather the headlands of the bay.

“The plot takes form; with many a deep and muttered curse the murderous decision is taken that if a vessel can be trapped to destruction it shall be.

“There is an old man of the party whose brow is furrowed with dread lines; he does not say much, but every now and then his eyes glare, and his features work as if convulsed. His comrades look at him—twice—and, as a terrific squall shakes the house, a third time. Silently he rises, and leaves the inn. . . . Now in the pitch darkness of the night, with bowed head, and faltering steps battling against the storm, the old man leads a white horse along the edge of the cliff. To the top of the horse’s tail a lantern is tied, and the light sways with the movement of the horse, and in its movements seems not unlike the masthead light of a vessel rocked by the motion of the sea. A whisper has gone through the village of a chance of something happening during the night, and

most of the men and many of the women are on the alert, lurking in the caves beneath the cliff, or sheltered behind jutting pieces of rock.

"The vessel makes in steadily for the land; the captain grows uneasy, and fears running into danger; he will put the vessel round, and try and battle his way out to sea.

"The look-out man reports a dim light ahead. What kind? and Whither away? He can make out that it is a ship's light, for it is in motion. Yes, she must be a vessel standing on in the same course as that which they are on. It is all safe, then; the captain will stand in a little longer; when suddenly, in the lull of the storm, a hoarse murmur is heard—surely the sound of the sea beating upon rocks! Yes! look! a white gleam upon the water! Breakers ahead! breakers ahead! Oh, a very knell of doom! The cry rings through the ship, 'Down, down with helm—round her to!' Too late, too late! A crash, a shudder from stem to stern of the stout ship, the shriek of many voices in their agony, green seas sweeping over the vessel, and soon broken timbers, bales of cargo, and lifeless bodies scattered along the beach, while the shattered remnant of the hull is torn still further to pieces with each insweep of the mighty seas as they roll it to and fro among the rocks. Fearful and crafty the smile that darkened the dark face of the willing murderer who was leading the horse with the false light as he heard the crash of the vessel and the shrieks of the drowning crew! Fearful the smile that darkened the faces of the men and women waiting on the beach as they came out from their places, ready to struggle and fight among themselves for any spoil that might come ashore! A homeward-bound ship from the Indies! Great good fortune—rich spoil! Bale after bale is seized upon by the wreckers, and dragged high upon the beach out of the way of the surf. But, see! a sailor clinging to a bit of broken mast! With his last conscious effort he gains a footing on the shore, staggers forward, and falls. Is he alive? Not now! Why did that fearful old woman kneel upon his chest and cover his mouth with her cloak? Dead men tell no tales—claim no property!"

Alas! the above is no imaginary or exaggerated statement of facts.

A few examples, which have occurred for the most part within the last hundred years or so, are appended. They have been culled from that most rigidly correct chronicler, the *Annual Register* :—

Lent Circuit, 1774.—At Shrewsbury Assizes, bills of indictment were preferred by Captain Chilcot, late of the *Charming Jenny*, against three opulent inhabitants of the Isle of Anglesea, one of whom is said to be possessed of a considerable estate, and to have offered five thousand pounds bail in order to their being tried at the next assizes on a charge of piracy, when the bills were found. It appeared that on the 11th September, 1773, in very bad weather, in consequence of false lights being discovered, the captain bore for shore, when his vessel, whose cargo was valued at £19,000, went to pieces, and all the crew, except the captain and his wife, perished, the latter being brought on shore on a portion of the wreck. Nearly exhausted, they lay for some time, till the savages of the adjacent places rushed down upon them. The lady was just able to lift a handkerchief up to her head when her husband was torn from her side. They cut the buckles from his shoes, and deprived him of every covering. Happy to escape with his life, he hasted to the beach in search of his wife, when, horrible to relate, her half-naked

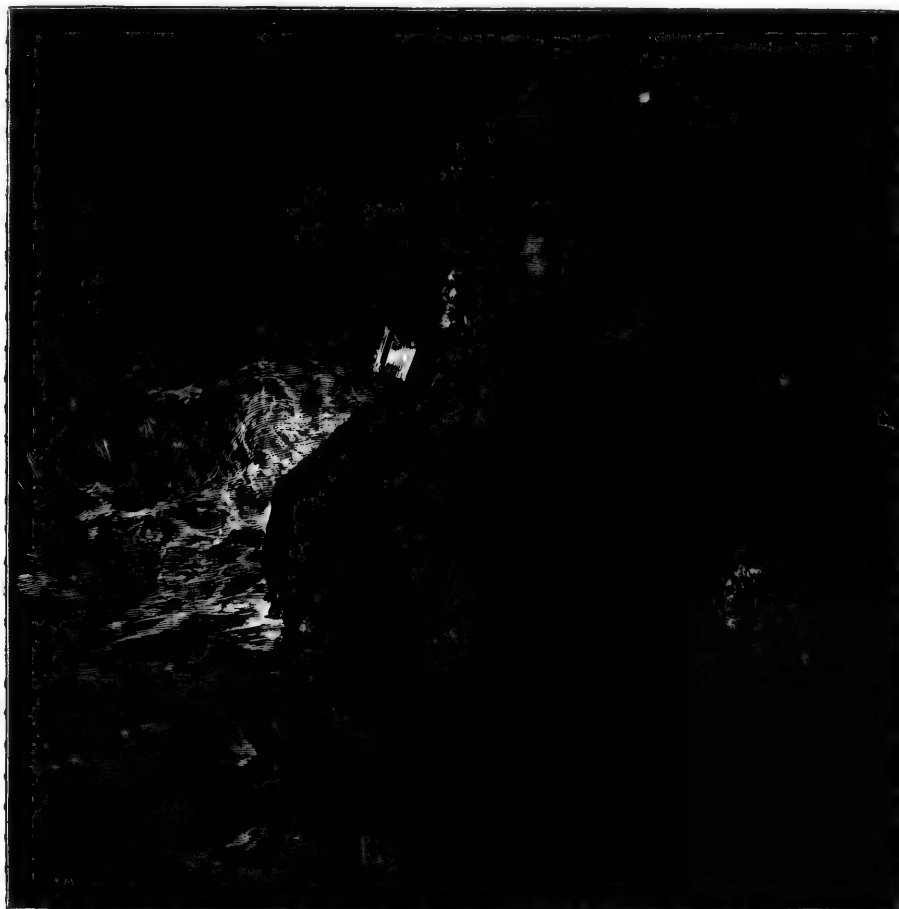
and plundered corpse presented itself to his view. What to do Captain Chilcot was at a loss. Providence, however, conducted him to the roof of a venerable pair, who bestowed upon him every assistance. The captain's wife, it seems, at the time the ship went to pieces, had two bank bills of a considerable value and seventy guineas in her pocket. At the Summer Assizes at Salop, Roberts and Parry, two of the above-named, were found guilty of plundering the *Charming Jenny*, but their counsel pleading an arrest of judgment, sentence was suspended. Eventually one was executed, and one had his sentence commuted.

On the 7th September, 1782, one John Webb was executed at Hereford for having plundered a Venetian vessel drawn on shore on the coast of Glamorganshire by stress of weather. No mention is made of hurting or molesting the crew, and it is evident that the laws were, about this time, stringently carried out. "This," said the *Annual Register*, "it is hoped, will put a final stop to that inhuman practice of plundering ships wrecked upon the coast."

Next follows an example in the present century:—"Jan'y. 8, 1811.—Another daring attempt (says the *Register*) was made by a party of country-people at Clonderalaw Bay to take possession of the American ship *Romulus* on this day. They assembled at about ten in the evening, to the amount of about two or three hundred, and commenced a firing of musketry, which they kept up at intervals for three hours; when, finding a steady resistance from the crew, and guard of yeomanry which had been put on the vessel on her first going on shore, they retired. The shot they fired appeared to be cut from square bars of lead, about half an inch in diameter. One of these miscreants dropped, and was carried away by his companions."

The following is an extract from a letter:—"On Friday, the 27th of October, 1811, the galliot *Anna Hulk Klas Boyr*, Meinerty master, from Christian Sound, laden with deals, for Killalu, was driven on shore at a place called Porturlin, between Killalu and Broadhaven. The captain and crew providentially saved their lives by jumping on shore on a small island or rock. At this time the stern and quarter were stove in. The crew remained two hours on the rock, when they were taken off by a boat and brought to the mainland. Shortly after, the captain's trunk, with all the sailors' clothes in general, came on shore, when the country-people immediately began to plunder, leaving the unfortunate sufferers nothing but what they had on their backs. The plunderers repaired to the wreck, and cut away everything they could come at of the sails, rigging, &c., while hundreds were taking away the deals to all parts of the country. Though the captain spoke good English, and most pitifully inquired to whom he might apply for assistance, yet he could not hear of any for fourteen hours, when he was told that Major Denis Bingham was the nearest and only person he could apply to. With much difficulty he procured a guide, and proceeded to Mr. Bingham's, a distance of twenty miles through the mountains. In the meantime, after thirty-six hours' concealment of this very melancholy circumstance, Captain Morris, of the *Townshend* cruiser, who lay at Broadhaven, a distance of about ten miles from the wreck, heard of it, and, approaching it, landed with twenty men, well armed. In coming near the wreck he first fired in the air, in order to disperse the peasantry, which had no effect; he therefore ordered his men to fire close,

which had the desired effect, when he immediately pursued them into the interior, from three to five miles distance, dividing his party in different directions, when, by great exertion and fatigue, they saved about 1,800 deals and a remnant of the wreck. Captain Morris had some of the robbers taken, but his party being so scattered, they were rescued



WRECKERS WAITING FOR A WRECK.

by a large mob of the country. The unfortunate captain and crew were taken by Captain Morris on board his cutter, where they got a change of clothing, and were taken every possible care of."

The following particulars of the wreck and plunder of the *Inverness*, in the river Shannon, loaded at Limerick with a cargo of provisions, under contract for the Victualling Board, and bound to London, will be found interesting:—

" From Captain Miller to Mr. Spaight, Merchant, Limerick.

" Kilrush, Feb. 24, 1817.

" DEAR SPAIGHT,—As I am now in possession of most of the particulars of the wreck of the *Inverness*, I shall detail them to you as follows:—

" She went on shore on Wednesday night, the 19th instant, mistaking Rinevaha for Carrigaholt, and would have got off by the next spring-tide had the peasantry not boarded her, and rendered her not seaworthy by scuttling her and tearing away all her rigging; they then robbed the crew of all their clothes, tore their shirts, which they made bags of to carry away the plunder, and then broached the tierces of pork, and distributed the contents to people on shore, who assisted to convey them up the country. The alarm having reached this on Thursday, a sergeant and twelve of the police were sent down, with the chief constable at their head, and they succeeded in re-taking some of the provisions and securing them, driving the mob from the wreck. The police kept possession of what they had got during the night; but very early on Friday morning the people collected in some thousands, and went down to the beach, where they formed into three bodies, and cheered each other with hats off, advancing with threats, declaring that they defied the police, and would possess themselves again of what had been taken from them, and of the arms of the police. The police formed into one body, and, showing three fronts, endeavoured to keep them at bay, but in vain; they assailed them with stones, sticks, scythes, and axes, and gave some of our men some severe blows, which exasperated them so much that they were under the necessity of firing in self-defence, and four of the assailants fell victims, two of whom were buried yesterday. During their skirmishing, which began about seven o'clock, one of the men, mounted, was despatched to this town for a reinforcement, when Major Warburton, in half an hour, with twenty cavalry, and a few infantry mounted behind them, left this, and in one hour and a half were on board the wreck, and took twelve men in the act of cutting up the wreck. One of them made a blow of a hatchet at Major Warburton, which he warded off, and snapped a pistol at him; the fellow immediately threw himself overboard, when — Troy charged him on horseback, up to the horse's knees in water, and cut him down. The fellows then flew in every direction, pursued by our men, who took many of them, and wounded several. Nine tierces of pork had been saved. Her bowsprit, gaff, and spars are all gone, with every stitch of canvas and all the running rigging. The shrouds are still left; two anchors and their cables are gone, and even the ship's pump. A more complete plunder has seldom been witnessed. Yesterday the revenue wherry went down to Rinevaha, and returned in the evening with the Major and a small party, with thirty-five prisoners, who now are all lodged in Bridewell. The women in multitudes assembled to supply the men with whisky to encourage them. Nothing could exceed the coolness of — Balfice and his party, who certainly made a masterly retreat to the slated store at Carrigaholt, where I found them. He and Fitzgerald were wounded, but not severely. Fitzgerald had a miraculous escape, and would have been murdered, but was preserved by a man he knew from Kerry, who put him under his bed.

" J. MILLER."

A late case of plundering on a large scale occurred the 26th September, 1817. The

Norwegian brig *Bergetta*, Captain Peterson, was wrecked on the Cefu-Sidau sands, in Carmarthen Bay. She was bound from Barcelona for Stettin, with a cargo of wine, spirits, &c., when the master, losing his reckoning, owing to a thick fog, fell into the fatal error of taking the coast of Devon for that of France, and acted under that persuasion. So circumstanced, a violent gale, together with the tide, drove the vessel into the Bristol Channel, and she struck upon the above sands, and in the space of two or three hours went to pieces. The master and crew, with great difficulty, got into the boat, and were all happily saved. Notwithstanding the greatest exertions on the part of the officers of the Customs, supported by several gentlemen and others, acts of plunder were committed to a considerable extent. Of 266 pipes and casks of wine, &c., not above 100 were saved. Hundreds of men and women were reduced to nearly a state of insensibility through intoxication.

A scarce and curious tract, published in 1796, exists in the library of the British Museum, and a few extracts from it will show the arguments by which the wreckers of the last century salved their consciences. It is supposed to be a dialogue between one Richard Sparkes, a chandler by trade, but a professional wrecker also, and John Trueman, "an honest taylor."

"'Good news! good news, neighbour!' said Richard Sparkes, the chandler, as he entered a shop where John Trueman, an honest taylor, was at work. 'The vessel which has been these three hours fighting with the surge and winds for the harbour has at last bulged. It is a trader from Amsterdam, they say, and faith! two thumping casks were floating before I left the beach. Rare sport, Master Trueman, rare sport, let me tell you! A good blustering wind and a high surf is no bad thing for a seaport.'

"'Honest Trueman, who had not been long an inhabitant of the place, and was quite unacquainted with this language—which, to the disgrace of humanity, is too often used by the unfeeling on such occasions in seaport towns—suspended his work, and listened to this harangue with too much surprise to interrupt it. At length, said he, 'Do you call this rare sport? Do you call this good news?'

"'SPARKES. 'To be sure I do. I mean to be out all night; the tide will return in about three hours, and I warrant it will bring us something worth looking after. But mayhap, as you are a new-comer, Master Trueman, you do not know the go at these seasons, so I will tell you. You must know that when a vessel strikes it is catch as catch can for her lading: one has as good a right as another, and he is the luckiest who can get most. We call it *going a wrecking*; and let me tell you it is no bad business. There is my neighbour Perkins, the pilot, got the Lord knows what by the smuggling cutter that was wrecked about three leagues from hence two months ago. Ay, cask upon cask of the best French brandy, and tea, and I cannot tell you what he got; but he has held his head pretty high ever since, for, as good luck would have it, she struck upon a shoal of rock where the Custom-house officers would not venture, so Perkins and a few more knowing ones had it all to themselves. As I told you before, Master Trueman, this *going a wrecking* is no bad business, so look about you.'

Trueman upbraids the first speaker with dishonesty and want of humanity.

"'Humanity,' says Sparkes, 'odds my life! neighbour, there's not a more tender-hearted fellow alive. Many is the life my boat, when I was in the fishing trade, has saved from pure good-will; but as to the matter of the *wrecking*, every man must take care of

his own interest. Charity, you know, Master Trueman, should begin at home." And he goes on to say that it was no fault of his that the vessel bulged, or that the master or cabin-boy were drowned; that it is all the chance of war, and that one vessel was the same to him as another, provided it were well laden. He added that he did not pretend to be better than his grandfather, and that wrecking was in fashion in his days and in those of his good old father before him.

Mr. D. Mackinnen, who made a tour through the West Indies early in the present century, particularly mentions the Bahamas as the home of wreckers. He says that the immense variety of banks, shallows, and unknown passages between the hundreds of islands



MAJOR WARBURTON AT THE WRECK OF THE "INVERNESS."

which form the group render the chances of shipwreck frequent. In order to save the crews and property so constantly exposed to danger, the Governor of the Bahamas, about the commencement of this century, licensed a number of daring adventurers to ply up and down and assist ships in peril, and there could not have been collected a more skilful and hardy set of men. But, unfortunately, the governor's good intentions were baulked by the larger part of them becoming wreckers. Mr. Mackinnen asking one of these men what success he had lately had, was told that there had been about forty sail of pilots along the Florida coast for four months. He remarked that they must have rendered great service to the crews wrecked in that dangerous passage. The pilot said, "No; they generally *went on* in the night." "But could not you light up beacons on shore?" "No, no," said the man, laughing, "we always put them out for a better chance by night." "But it would have been more humane——" "I did not go there for humanity; I went *racking*!"

CHAPTER XIX.

"HOVELLING" v. WRECKING.

The Contrast—The "Hovellers" defended—Their Services—The Case of the *Albion*—Anchors and Cables wanted by a disabled Vessel—Lugger wrecked on the Beach—Dangers of the Hoveller's Life—Nearly swamped by the heavy Seas—Loss of a bailing Bowl, and what it means—Saved on an American Ship—The Lost Found—A brilliant example of Life-saving at Bideford—The Small Rewards of the Hoveller's Life—The case of *La Marguerite*—Nearly wrecked in Port—Hovellers v. Wreckers—"Let's all start fair!"—Praying for Wrecks.

THE wrecker was a land-ghoul, a monster in human form, who preyed on human life and property. The "hovellers," a distinctive term on many parts of the coasts of this sea-girt isle, is applied to the hardy men who, in all weathers and at all risks, go to the assistance of ships in distress, and occasionally benefit by a wreck, but they are not wreckers. The Rev. Mr. Gilmore, who has so well described the dangers, perils, and triumphs of the life-boat service, very properly includes among the storm warriors the honest men who perform these practical deeds of naval daring. Visitors to Ramsgate and other seaside resorts of the southern coast will remember the luggers in which holiday excursions are made; many of these same boats are, in winter more especially, engaged in very serious work. "The more threatening and heavy the weather," says our authority, "the greater the probability of disaster occurring or having occurred, then the more ready are the crew to work their way out to the Goodwin Sands, and to cruise round them on the look-out for vessels in distress; they dare not take the lugger into the broken water—there a life-boat alone can live: but still, she is a grand sea-boat, one that will stagger on, with a ship's heavy anchor and chain on board, through weather bad enough for anything—a boat that is well suited for the hard and dangerous service which employs her during the winter months." The hovelling lugger has generally a crew of ten men, and these receive no regular pay. Any salvage or reward the vessel earns is commonly divided into fourteen shares; the boat takes three and a half for the owners, half a share goes for the provisions, and each man of the crew receives one share. Mr. Gilmore says that "complaints are sometimes made of the amounts charged by these men for services rendered; but the cases of a good hovel are few and far between; and often the luggers put out to sea night after night throughout a stormy winter, hanging about the sands, in wind and rain, and snow and mists, the men half-frozen with the cold and half-smothered with the flying surf and spray, and often week after week they thus suffer and endure, and do not make a penny-piece each man; then at last, perhaps, comes a chance: a big ship is on the tail of a sandbank; they render assistance and get her off; they have saved thousands of pounds worth of property; and the captain, and the owners, and the underwriters all look aghast, and cry out with indignation when they ask perhaps a sum that will give them ten or fifteen pounds a man."

Not uncommonly the lugger speaks a vessel, and finds that an anchor or anchors, cables, &c., have been lost, and must be replaced. They must make in all haste for shore, and obtain what is needed, and put out again to the distressed vessel. What all this may mean on occasions to the owners and men of the hovelling vessels is shown in the following example—the case of the *Albion* lugger.



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The *Albion* meets a vessel driving before the gale, having lost both her anchors and cables; receives orders to supply her from shore; and the hardy crew, putting the vessel round, beat through the heavy seas, and make for Deal. "They have to force the boat against wind and tide, and much skill is required to prevent her being filled by the rising seas which sweep around her; now she rushes upon the beach, the surf breaks over her and half fills her with water; with a tremendous thump and shake she strikes the shore with her iron keel.

"As the wave which bore the lugger in upon the beach recedes, a man springs overboard from the bow with a rope in his hand; many catch hold of the rope, and haul their hardest to keep the boat straight, head on to the beach; there is a stem strap—a chain running through a hole in the front part of the keel; a boatman watches his opportunity, and, as a wave sweeps back, rushes down and passes a rope through the loop of the strap; the other end of this rope is fastened to a powerful capstan, which is placed high up on the beach. 'Man the capstan! Heave with a will!' and the strong men strain at the capstan bars until the capstan creaks again. There is no starting the lugger: she is so full of water from the surf breaking on the beach that she is too heavy for the men at one capstan to move her; ropes are led down from two other capstans, and rove through a snatch-block fastened to a boat on the beach; all put out their strength, round they tramp, with a 'Ho! heave ho!' and slowly the lugger travels up the beach, and is safe from the roll of the breakers. The men get the water out of her, haul her higher up on to a swivel platform, turn her round head to the sea, and the leading hands hurry away to inquire about an anchor and cable. The agent supplies them with such as seem suitable for the size of the vessel, and which will perhaps weigh together about seven tons." Then follows the labour of getting them on board, but in a short time all are ready for sea.

"The gale has rapidly increased in force, and a frightful surf is running on the beach; the roar of the breakers on the shingle, the howling of the storm, the gleam of white foam shining out of the mist and gloom, all picture the wildness of the storm; but the undaunted boatmen do not hesitate. All is ready; the signal given; the boat rushes down the steep ways, and is launched into the sea. A breaking wave rolls in swiftly, it meets the bow of the lugger in its rush, fills her; for a moment the big boat runs under water, and then is lifted and twisted like a toy in the grasp of the sea, and is thrown, in the heave of the wave, broadside on to the beach; a cry of horror from all on shore, and a rush down to aid the crew, who are all—there are fifteen of them—struggling in the surf: now the men are washed up by the wave, and feel the ground and stagger forward; now they are caught again by a breaker and rolled over; it is for each of them a terrible battle with the fierce seas; here one gets on his feet and stumbles forward, he is caught by the men on shore and dragged up the beach; there a man is lying struggling on the shingle, trying in vain to rise, exhausted and confused, two men seize his collar, and pull him forward a yard or two, then get him to his feet, and he escapes the next wave, which would have washed him out to sea again. Now all the men seem to be saved; names are shouted—do all answer? No; there is one missing! All rush to the water's edge and gaze into the darkness, eagerly watching each shadow mid the surf. 'There he is! No!

Yes it is! there—lifting on the surf! there, rolling over!’ ‘Quick! quick! form a line!’ And the brave boatmen grasp each other’s hands with iron strength, and form a chain, the lowest of the four or five men at the sea end of the chain being in the water. The waves battle with them, but sturdily they persevere. At last the body is within reach of the seaward man; he grasps it; the men are dragged up the beach, and the poor insensible man is carried ashore. Alive or dead? They cannot say; and with a great fear in their hearts they carry him hurriedly up the beach, and soon, to the great joy of all, he gives signs of life, and gradually recovers.

“In the meanwhile, the poor boatmen on the beach have nothing that they can do but watch their fine boat, which was worth five hundred pounds, being torn and hammered to pieces in the surf. Plank after plank is wrenched from her. Now, with a loud crash, she is broken in half; the two halves part; the anchor and cable fall through her. They can see part of the forepeak, with one side torn away, floating in the breakers; soon that also is rent to pieces, and nothing but fragments of the boat float in the surf or are strewn about the beach; and the boatmen, heavy-hearted, but thankful that they have escaped with their lives, go slowly to their homes to rest for a few hours and recruit their strength, and then be ready to form part of the crew of any other boat, and at the first summons to rush out again to the encounter with the stormiest seas.” And that what the men of Deal are *par excellence*—hardy, brave, and skilful—the men of our coasts are very generally.

Sometimes the hovellers are distinctly associated with the life-boat men in their efforts to save life. Gilmore cites a case where a lugger’s boat had succeeded in taking a number of men off a wreck, when they themselves were caught in a squall, and were only too glad to make for the life-boat, to which the larger part were transferred. Then came a chapter of difficulties, for neither steamer nor lugger could be discovered through the fog, which obscured everything within a few yards of them. When they at length reached the *Champion* lugger, the shipwrecked crew refused to leave the life-boat. They had been as nearly as possible wrecked a second time in the lugger’s boat. What a story had these poor men to relate!

Their vessel, the *Effort*, had been beaten about for days in the North Sea previous to grounding on the fatal Goodwins. They hoisted lamps, and were preparing to set a tar-barrel on fire, when their ship, which was very light, rolled from side to side, almost yard-arms under, and then suddenly capsized altogether. “At once,” said one of the narrators, “and with difficulty, we made for the weather rigging, and were glad to find that not any of the crew were lost as she fell over. We lashed ourselves to the rigging. We knew, to our great joy, that the tide was falling; had it been rising, we must have very soon been overrun by it, the vessel broken up, and every man of us lost. We were in danger enough as it was, for the brig, soon after she capsized, was caught by the tide, and worked round, with her deck towards the seas; and as the heavy seas broke over and came rushing up the deck, they fell on us with terrible weight, and beat us and crushed us against the ship’s rail, so that we were forced to unleash ourselves from the rigging; and what to do we did not know, till one of us said, ‘Our only chance is to lash the end of the ropes round our waists, and let go the rigging as the waves



LOSS OF THE "ALBION" LUGGER.

come.' And so we did; and terrible work it was. As the waves came we slackened the ropes and went away a little with them; and as they passed, half smothered as we were, hauled ourselves back to the rigging and held on a bit; and then, when the next wave came, we let go, and were all adrift in the wash again; our hands were almost torn to pieces with the strain on the ropes and grasping at the side of the vessel. . . . You see, too, how our clothes were nearly dragged off us: it was indeed an awful time!" One man grew terribly excited as they told the dismal story. His limbs and features worked, and as the waves dashed over the life-boat he fancied himself being washed off the wreck, and his reason quite gave way for the time. He shouted out, "Let me drown myself! Let me drown myself! I can stand it no longer!" and was with the greatest difficulty held back by three men, who would not relinquish their hold till they got safe into harbour.

The hoveller's life is necessarily full of danger, for his services are usually only required in the very worst weather; and if he can save anything from a wreck, it will generally be done under circumstances of great difficulty. Gilmore cites an example where some of these men were endeavouring to save the rigging of a wrecked vessel, when a squall came on, with driving snow and hail. The men in the rigging were somewhat interested in their work, and were at first inclined to risk the weather, but the gale increased so rapidly that it became evident that they must leave in their boat at once. Away for their lives the men pull, the little boat scethes through the troubled waters, and they soon near the edge of the sand, and are making for deep water, when they suddenly hear the noise of the surf beating on the shallows immediately ahead of them. They pull ahead a little, and can see the huge waves rolling in out of the deep water, mounting up, curling over, and breaking, meeting other breakers, foaming up against them—in fact, a sea of raging waters surrounding the sands in which their little boat would be swamped at once. As they mount on a wave they can see the lugger riding safely just outside the surf, only a quarter of a mile off, but that quarter of a mile it is impossible for them to pass, and equally impossible for the lugger to get any nearer to them. The seas break over them constantly, and for a while they return to the dangerous shelter of the wreck.

"The Goodwin Sands are about nine miles long; in the middle of them there is, at low water, a large lake, which is called on the chart 'Trinity Bay,' but which is known to the boatmen as the 'In-Sand.' The men row in the direction of the lake, and row over the sandbanks which surround it, as soon as the tide has flowed sufficiently to enable them to do so. Now they find themselves in completely smooth water, and are safe; but for how long? a short hour or so, for the hungry waves are following them up fast. Still higher and higher comes the tide, and a furious surf begins to rage over the banks that for a time protect the lake." Well do the men know how short must be their period of rest.

Soon the heavy rollers come in and threaten to swamp them; the boat is nearly full of water. At this juncture the steersman, who has been steering and baling the boat for about four hours, suddenly lets the bowl with which he is baling fly from his hand; he gives a cry of horror, and the men cannot help repeating it, for may not this apparently small accident be fatal to them? To keep the boat afloat without baling is impossible; the surf breaks into her continually, and that bowl is indispensable to their safety,



LOSS OF THE "ALBION" LUGGER.

for the men cannot use their sou'westers for the purpose when both hands are so busily employed in freeing their oars from the seas and keeping the blades from being blown up into the air by the force of the gale. Most happily, the bowl is a wooden one, and it floats a few yards from them. The men watch it anxiously as they are tossed up and down by the quick waves. Back the boat down upon the bowl they cannot, and it is drifting away faster than they are floating. It would seem a simple matter to pick up a bowl floating within a distance so small, but the waves long render it impossible. Suddenly the coxswain cries, "Here is a lull; round with her sharp!" The men on the starboard side give a mighty pull, and the others back their hardest; then a pull altogether; the bowl is within reach; the coxswain grasps it with a hasty snatch. "Round! round with her quick!" and the boat is got head straight to the seas again before the waves can catch her broadside and roll her over. All breathe again: they have another chance of life.

They get clear of the Sands, but a fierce gale is still raging. "As they get into the Gull stream, they see vessel after vessel running with close-reefed topsails before the gale; the boatmen hail them, but they get no answer. One little sloop affords them slight hope, for she is evidently altering her course, but after a moment's apparent hesitation, away she goes again before the gale, and abandons them to their fate. The captain of the little vessel related afterwards how, in the height of the storm, he saw some poor fellows in a small boat, and had a great wish to try and save them, but the sea was running so high that he felt it was impossible to heave his vessel to, and so had to leave them, and that they must have been driven on the Sands and lost. This sloop was about a quarter of a mile from the boat, and the men do not again get as near to any other ship; and as vessel after vessel passes, and the night begins to grow dark, the position of the men becomes more and more hopeless, and they all feel that if no vessel picks them up they must soon be blown in again upon the sands, and there perish." The men work on, but solemnly, very solemnly.

But one vessel, a large American ship, remains at anchor in the Downs; vessel after vessel had slipped their cables and run before the gale. It is their last hope. "As they drop slowly towards her, they shout time after time, but cannot make themselves heard, and it is getting too dusk for them to be seen at any distance; the seas are running alongside the ship almost gunwale high, and it is impossible to get nearer to her than within fifty yards. Hail after hail the men give; still they get no answer. They can see a man on the poop, but he evidently neither sees nor hears them, and their last chance seems slipping away, for they are fast drifting past the vessel. 'Get on the thwart, Dick, and shout with all your might!' the coxswain says to the man pulling stroke oar. 'I'll hold you!' hauling in his oar and catching it under the seat. The man springs upon the thwart, and balancing himself for a second, hails with all his force."

"The man is moving; he hears us, hurrah!" is the glad cry in the boat; and they can soon see several astonished faces peering over them. The boat drifts by the ship; they give a pull or two, to get her under the stern of the vessel; a coil of rope with a life-buoy is thrown to them, and they manage to get it on board. The captain is now on deck; he orders other ropes to be sent down, and soon another life-buoy, with cord attached, comes floating by. Still the boat is in great danger; their safety hitherto has been in floating

with the waves, yielding to them as they rolled on, but now the little boat has to breast the waves, and is tossed high in the air, and again plunged far down, running great risk of being overturned. "The difficulty now is how to get the men out of the boat, for they dare not haul her up closer to the vessel, as she will not ride with a shorter scope of rope. They send another rope down to the boat, with a bowline knot made in it, for the men to sit in, and then shout to the men, 'We will haul you on board one at a time!'" A moment's question as to the order in which the men shall go is quickly decided, for each feels that at any moment the boat may sink or upset. They leave in the order in which they sit, and one after another they plunge into the waves, and are hauled on board, dripping, but saved! Very soon the boat fills and turns over, and hangs by the ropes till morning.

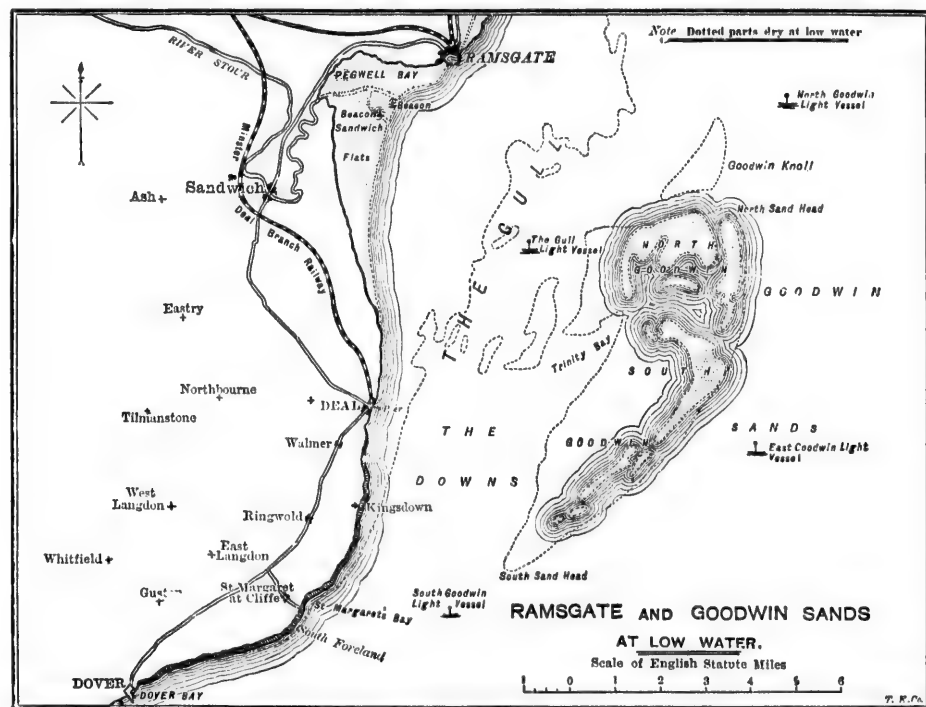
The captain will hardly credit their story at first. "Impossible! impossible!" says he. "No boat could live in such a sea, and over the Sands. Impossible!" But he becomes convinced at last, and all on board show every attention and kindness. A little brandy and some dry clothes at once, a beefsteak supper and a glass of 'grog later on, followed by warm beds made up on the captain's cabin floor, and their adventures in an open boat were but the memory of a horrid dream. The coxswain, however, fell very ill soon after, and was nigh death's door; he did not recover his strength for a twelvemonth, so greatly had the anxiety of that night's work told upon him.

Meantime, the lugger, after cruising backwards and forwards, the crew keeping an anxious and fruitless look-out for their comrades in the boat, is obliged to put in for Dover, from whence they telegraph the sad news that six of their men are to all appearance lost. Next morning they make one more effort to find some traces of their lost companions, and then steer, sad and disheartened, for Ramsgate. There the arrival of the lugger is most anxiously awaited. Alas! it is as they feared, and many a household is plunged in grief. While this is going on, the boatmen leave the American ship and row steadily for Ramsgate, near which they fall in with another lugger, on which they are taken. The lugger's flag is hoisted, in token that they are the bearers of good news, and great is the curiosity of the men about the harbour. A crowd hurries down the pier to watch her arrival, and as soon as the men missing from the *Princess Alice* are recognised, the cheers and excitement are wild in the extreme. Men rush off to bear the good news. "One poor woman, in the midst of her agony and mourning for her husband, and surrounded by her weeping friends, is surprised by her door being burst violently open, and at seeing a boatman, almost dropping with breathlessness, gasping and gesticulating and nodding, but trying in vain to speak; and it is some seconds before he can stammer out, 'All right! all right! Your husband is safe—coming now!'"

The danger incurred by the hovellers is well illustrated by the following example, recorded by our leading journal* some years since. Nine of these men endeavoured to save a sloop, the *Wool-packet*, of Dartmouth, stranded on Bideford Bar, and the crew must have lost their lives but for the noble service performed, under great risks, by Captain Thomas Jones, master of the steam-tug *Ely*, of Cardiff. A shipowner of Bideford, who was an eye-witness of the brave deed, stated that the crew of the vessel had aban-

* *The Times*, November 5th, 1866.

doned her, and the two boats' crews, consisting of nine men, afterwards boarded the wreck, with the view of trying to get her off the bar; but when the tide rose the sea broke heavily over the vessel, and the men hoisted a flag of distress. The steam-tug *Ely* now hastened to the rescue, against a strong tide and wind. Before, however, she could get near the wreck, the nine men were driven to seek refuge in the rigging. The sea was breaking fearfully in all directions and the vessel rolling from side to side, but Captain Jones and his crew bravely proceeded through the broken water, at



MAP SHOWING COAST OF RAMSGATE AND THE GOODWIN SANDS.

the risk of their lives and vessel, and succeeded, at the first attempt, in saving three of the men. This was all that they could then accomplish, for the sea was now breaking so furiously over the wreck that the steamer was driven away; and the same want of success attended a second and third attempt to approach the wreck. The captain then backed astern, and, with consummate skill and boldness, actually placed the steamer alongside the vessel's rigging, with her bow over the deck of the wreck, thus saving the six men in the rigging; and within the short space of two minutes the wreck had actually disappeared, and was not seen afterwards. But for this bold and successful service, nine widows (for the nine rescued men were all married) and forty fatherless children would to-day be lamenting the loss of husbands and fathers. The

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WRECK OF THE "WOOL-PACKET" ON BIDEFORD BAR.

National Life-boat Institution presented a medal, &c., to the captain, and £1 each to the eight men forming the crew.

The greatness of the risk to the hoveller, and the comparative smallness of his reward, are illustrated in the case of *La Marguerite*, a small French brig, rescued from the Goodwin Sands and brought safely into Ramsgate Harbour. She was owned by her captain, and represented to him the labours of a hardworking life. She was bound



THE LUGGER REACHING RAMSGATE HARBOUR.

from Christiania to Dieppe, with a cargo of deals, and was considerably hampered on deck, the timber being piled up almost to her gunwale. She lost her course in the night, and grounded on the Sands. "Where are they? Where can they be? What horrible mistake have they made?" writes Mr. Gilmore in his forcible manner. "They think they must have run somewhere on the mainland on the Kent coast; one man proposes to swim ashore with a rope, but the seas come sweeping over them with a degree of violence that quite does away with any thought of making such an attempt. They hurry to the long-boat, to try and get it out, but it and the only other boat

which is in the brig are speedily swept overboard by the seas. The vessel is on the edge of the Sands, and feels all the force of the waves as they roll in and leap and break upon the bark. With every inrush of the seas she lifts high, and pitches, crushing her bow down upon the Sands, each time with a thump that makes her timbers groan, and almost sends the men flying from the deck." For some twenty minutes she keeps thrashing on the Sands, when they glide off into deep water, and after much delay get their anchor overboard. The gale continues, and, after much entreaty—for the captain is a poor man—the crew succeed in inducing him to cut the foremast away, and the brig rides more easily when this is accomplished. They wait for daylight. They are then seen from Margate, and two fine luggers have a race to see which can get first to the vessel. The life-boat also puts off. One of the luggers gets alongside in fine shape, and the men at once recommend the captain to cut away the remaining mast, but he will not be persuaded. They raise the anchor, and passing a hawser on board, attempt to tow the brig from the Sands, but make little progress. To their satisfaction, they see the Ramsgate steam-boat and life-boat making their way round the North Foreland.

"The coastguard officer at Margate, when he saw that the Margate life-boat could not reach the brig, and knowing that if any sea got up where the vessel was that the luggers could be of no use, telegraphed to Ramsgate that the vessel was on the Knock Sands. The steamer and life-boat get under weigh at once, and proceed as fast as possible to the rescue. There is a nasty sea running off Ramsgate, but it is not until they get to the North Foreland that they feel the full force of the gale. Here the sea is tremendous, and as the steamer pitches to it the waves that break upon her bows fly right over her funnel—indeed, she buries herself so much in the seas that they have to ease her speed considerably to prevent her being completely overrun with them." The boatmen at last get on board the brig; a glance shows that no time must be lost, and as rapidly as possible the steamer is enabled to take the water-logged vessel in tow. The French crew are utterly exhausted with fatigue and excitement, and are quite ready to leave their vessel in English hands. Away the brig goes, plunging and rolling, with the seas washing over her decks, which are scarcely out of the water, while the two boats are tossing astern, all being towed by the gallant little steamer. They have nearly reached the harbour.

In spite of the rough cold night, the interest in life-boat work is too great for all sympathisers to be driven away from the pier-head; and there is a crowd there ready to watch the boats return and to welcome the men with a cheer. The steamer approaches cautiously, and the brig seems well under command. A couple of minutes more and all will be safe, when suddenly the rush of tide catches the wreck on the bow; she overpowers the lugger, which is towing astern; round her head flies; she lurches heavily forward, and strikes the east pier-head. Crash goes her jib-boom first, and the steamer, towing with all its might, cannot prevent her again and again crushing against the pier. Her bowsprit and figure-head are broken and torn off, her stern smashed in. Ropes and buoys are thrown from the pier. "The poor Frenchmen are almost paralysed by the scene and by excitement—they cannot make it out; the harbour-master, Captain Braine, has enough to do: he sees the danger of the men on

board the brig, but he sees more than this—he sees the danger of the crowd at the pier-head, for the brig's mainmast is swaying backwards and forwards, coming right over the pier as the vessel rolls, and threatens to break and come down upon the people as the brig strikes the pier; and if it does it will certainly kill some, perhaps many." Women shriek and men shout, and it looks as though the *Marguerite* would be wrecked in sight of all. Meantime the crew of the hovelling lugger are in equal, if not greater, danger.

"As soon as the men on board the lugger saw the brig sweep and crash against the pier, they cast off their tow-rope, but before they could hoist any sail, the way they had on the boat and the rush of the tide carried the lugger almost between the vessel, as she swung round, and the pier. The men, however, escaped that danger, and indeed death, but the boat was swept to the back of the pier, and in the eddy of the tide was carried into the broken waters; then she rolls in the trough of the sea; wave after wave catches and sweeps her up towards the pier, as if to crush her against it, but each time the rebound of the water from the pier acts as a fender and saves her from destruction; but she is an open boat, and if one big wave leaps on board it will fill her, and she must sink at once; and the seas around her are very wild, the surf from their crests breaks into her continually. The people on the pier see her extreme peril; some run to the life-boat men, who are preparing to moor the boat, and shout to them to hasten out—that the brig is breaking up, and that the lugger will be swamped; before, however, the life-boat can get out the brig is towed clear of the pier, and, the lugger having drifted to the end of the pier, the men are able to get up a corner of the foresail; it cants the lugger's head round; the men get the foresail well up: it fills; she draws away from the pier and away from the broken water, and is clear." But now the brig, the rudder of which had been wrenched out of her on the Sands, has no boat to help her steer, and lurches about in all directions. A heavy sea strikes her bow; the steamer's hawser tightens, strains, and breaks! Excited people on the pier crowd round the harbour-master, and beg him to order the life-boat men to take the crew and the boatmen off the wreck at once. That official knows, however, the boatmen too well: *they* will not leave her while a stitch holds together.

The captain of the steamer knows their peril, and backs his vessel down to the wreck, now not over a hundred yards from the Dyke Sand. She is rolling heavily, and the seas sweep over her; her crew can hardly keep the deck. The steamer gets close to the brig, and soon another cable is out. Each time the brig sheers heavily to one side or the other she is brought up with a jerk that makes the steamer tremble from stem to stern, but that plucky little boat is not to be beaten. Five brave fellows come off from the pier in a small boat, bringing a line with them: with this they haul a second hawser to the wreck; a crowd of people on the pier pull their hardest, and succeed in moving the wreck. This cable breaks shortly afterwards, but the steamer has by this time again got hold of the vessel, and tows her safely into the harbour, a miserable wreck, with masts and rudder gone, her bow and stern crushed, but with everybody safe on board. The *Marguerite* was ultimately repaired and sent to sea again, though she could never be the vessel she once was. And the Margate and Ramsgate men got a few pounds each for work that required each one to be a hero, and a very practical and sea-

manlike hero too. The old wreckers made ten times the money, with an infinitesimal proportion of the trouble.

Yes, times *have* changed for the better. Individuals may, of course, be found capable of any amount of brutality for the sake of gain, but the shipwrecked mariner of to-day is morally certain that his life and remaining property are safe when he reaches the shore of any part of the United Kingdom, and that for every ruffian there will be twenty kindly and hospitable people ready to pity and to aid him. The same could not be said of the early part of this very century. It seems almost incredible, too horrible, to be possible, that in 1811 the remnant of a poor crew of a frigate wrecked on the Scotch coast were, after buffeting the breakers and struggling ashore for dear life, absolutely murdered on the beach for the sake of their wretched clothes, or, at all events, stripped and left to die. When morning dawned the beach was found strewn with naked corpses. The inhabitants of many fishing villages and seaside hamlets were open to similar imputations late in the last, and indeed early in the present, century. Whole communities have in bygone times—let us trust gone for ever—turned out at the tidings of a vessel in danger, solely with a view to plunder. A tolerably well-known yarn, in which, probably, implicit confidence should not be placed, tells us of a wreck which occurred near the village of St. Anthony, Cornwall, one Sunday morning. This being the case, and the parishioners assembling at the church, the clerk announced that "Measter would gee them a holladay," for purposes on which that excellent clergyman well knew they were intent. This is only one part of the story, for it is stated that as the members of the congregation were hurrying pell-mell from the church, they were stopped by the stentorian voice of the parson, who cried out, "Here! here! let's all start fair!" The fact is that the contents or material of a wreck scattered around a coast were, and, no doubt, are still in many places, looked upon as legitimate prey by fishermen and others who would scorn anything in the form of treachery, in luring the good ship ashore, or in brutal treatment to the survivors of her crew. "Within the past five-and-twenty years," said a leader-writer a short time since, "it is said that a candidate for Parliamentary honours, while canvassing in a district near the coast, found that his opinion on the subject of wrecking was made a crucial point. Wrecking, indeed—so far as the appropriation of shipwrecked property is implied in the word—seems to have held very much the same position in popular ethics as smuggling has done. 'Such was the feeling of the wreckers,' writes one who was at one time Commissioner of the Liverpool Police, 'that if a man saw a bale of goods or a barrel floating in the water, he would run almost any risk of his life to touch that article, as a sort of warrant for calling it his own. It is considered such fair game, that if he could touch it he called out to those about him, "That is mine!" and it would be marked as his, and the others would consider he had a claim to it, and would render him assistance.' " We are told that the natives of Sleswig-Holstein considered wrecking so legitimate that prayers were offered up in their churches at one time that "their coasts might be blessed." Pastor and flock looked upon wrecks as much of blessings as they did a good fishing season. The parson, however, it was explained, did not really pray for wrecks. Certainly not! What he meant was that if there *must* be wrecks, those wrecks might happen on their coasts!

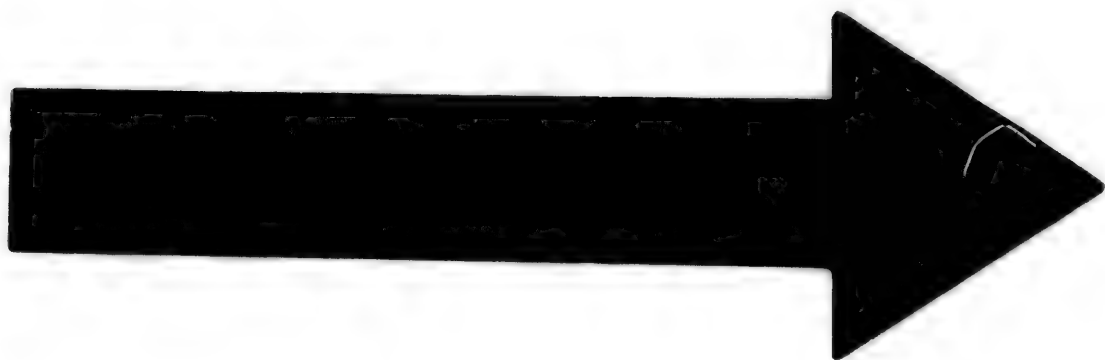
The question of "salvage" is of a nature too technical for these columns. In some minor matters it would seem that the authorities do not offer proper encouragement to fishermen and others to be decently honest or humane. At the period of the wreck of the *Schiller*, on the Scilly Islands, a correspondent of our leading journal* tells us "that many floating bodies of drowned passengers and seamen were picked up by the fishing boats which abound in that part of Cornwall. Upon some of them money or valuables were found, and these were given up to the Customs when the body was sent ashore. In such cases the valuables were retained for the friends of the drowned



RONAYNE'S BRAVERY.

persons, and a uniform reward of five shillings was paid to the finders. Now, for the sake of taking ashore such a body as I have described, the fishermen—seven or eight in number—would have lost their night's fishing, for it would not have been safe, even if the crew were willing, to have done otherwise. The smallness of the reward given in return for the services rendered would therefore operate as a strong inducement to the more selfish among them to prefer their fishing to the dictates of humanity. My informants even told a story of a fishing boat which picked up a floating body, and, having collected all the papers and valuables from it, restored the body itself to the deep, and went on its way. The papers and valuables were given up in due course, and no charge of dishonesty was preferred against the crew; but the want of humanity caused (and not unnaturally) a strong feeling of indignation against the perpetrators of this act. The fishermen, however, argued that if they brought the bodies into port (as they were

* *The Times*, January 6th, 1876.



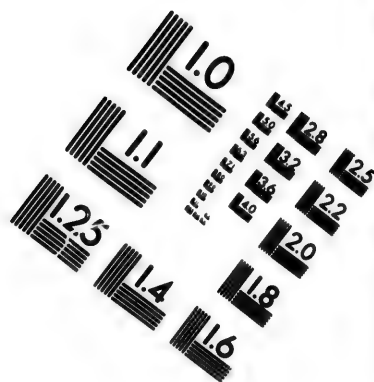
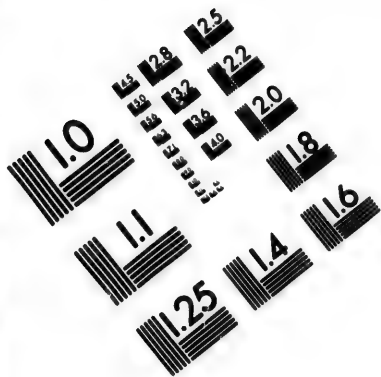
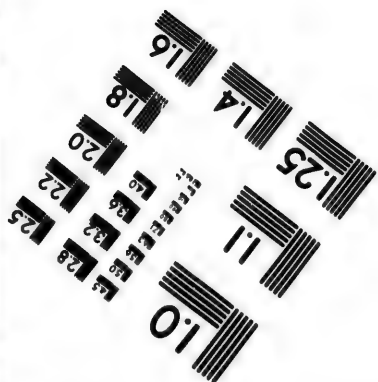
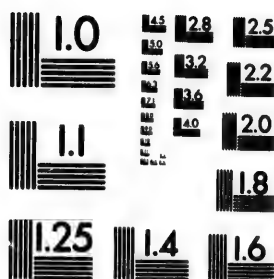


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instructed to do), they would get, at most, a sum of sevenpence per man for their night's work; and if they brought merely the property to the proper authorities, they were abused for their inhumanity; and that, therefore, their only alternative was to pass the bodies by, and attend to their own work. Should the view that I have here stated be found to be a general one, I think that it will be allowed that it is an argument for either paying more highly for the finding of bodies at sea, or allowing the finders the same salvage upon the property found upon the bodies that they would have received had the property been picked up in a chest."

Pleasant it is to turn from what we may well believe is only an occasional example of want of feeling to such a case as the following—one out of thousands that might be cited. It is slightly abridged from a little publication * which should be in the hands of all readers of "The Sea" interested in benevolent efforts for the seaman's welfare.

Some twelve miles westward from Tramore—a favourite watering-place and summer resort for the citizens of Waterford, and nearly half a mile from the coast—a farm is situated which has been long occupied by John Ronayne, a hardy and typical Irish farmer. The farm-house has few of the necessaries and none of the luxuries of civilised life, it is a true type of the poor class of farm-houses in many parts of Ireland, consisting of but two rooms—one the sleeping apartment, where Ronayne's family of twelve children have been born, and the other the living-room, where it is to be suspected sundry four-footed friends occasionally find their way, and bask or grunt before the fire. Rather less than half a mile from the farm is the rugged shore, approached by a rough "boreen," or narrow lane, emerging on the cliff near the course of a stream, which is a roaring foaming torrent in winter and spring-time. On winter days and nights, brown and turbulent, this stream rushes foaming into the ocean over crags and rocks and pebbly shore; but before it joins its fresh water with the salt sea foam, it plunges into a crevice, narrow and deep and deadly. Every coastman along the rock-bound shore knows this deep, treacherous hole, and warns the traveller to beware of it—for, once in it, there is no return. But this source of peril is little enough to that which is beyond.

A hundred yards or so from the cove into which this impetuous torrent pours frown two massive ridges of rock, offering to any venturesome ships attempting to run between their threatening sides destruction on either hand, while only some dozen yards of foaming breakers separate the one from the other. Skilful must be the steersman, and bold the skipper, who would dare the narrow channel, even though the only one by which they might hope to beach their sinking ship. And yet, on one fearful night in January, 1875, a large vessel, the *Gwenissa*, bound from Falmouth to Glasgow, and new but a few weeks before, successfully accomplished the dangerous passage. Not that any skill was shown, for none on the doomed ship knew of their proximity to rocks or shore, but, driving blindly on before the full fury of the gale, by chance were brought safely through. But in another instant the ship struck the rocky shore, and in a moment was shattered to pieces, timbers and tackle, cargo and living freight, being thrown, scattered and helpless, into the angry surf. Escaping, as by a miracle, the rocky dangers of Charybdis, the good ship *Gwenissa* had been hurled upon Scylla, and her doom sealed.

* *The Shipwrecked Mariner*. A Quarterly Maritime Journal. Vol. XXII. 1875. (Organ of the "Shipwrecked Mariner's Society.") The article is from the pen of Lindon Saunders, Esq.

The family at Killeton Farm little suspected, as they went to their humble beds, the tragedy which was being enacted on the shore; and even when some of the boys thought they heard cries of distress, little wonder—when the wind was blowing in great fitful gusts, sweeping round the homely cottage, shaking windows and doors, and moaning down the chimneys—that, after listening a while and hearing nothing further, they thought no more of the cries, and went to bed. Ronayne had, however, not been long in bed when a loud knocking awoke him, and he jumped up, and on opening the door was accosted by three men in sailor's garb.

The first surprise over, the instincts of hospitality asserted themselves, and he heaped up the turf fire, and, as they warmed themselves, learned that they alone of the crew of the *Gwenissa*, nine in number, were certainly saved. But there was a possibility that one or two might yet survive; and though the wintry blast roared loud without, Ronayne lingered not a moment. Hurrying on his clothes, and taking a large sod of flaming turf by way of lantern, he rushed down the "boreen," and soon reached the cove. Cautiously he made his way, and approached the edge of the stream, whence he now heard the shouts of several men. He followed up the cries of distress, and soon came upon a man in a most dangerous position.

Ronayne blew the turf until it glowed brightly, and, holding it down, saw a man waist-deep in the water, but so jammed between the crags that it was impossible for him to move, far less climb the overhanging rocks. He was bruised, stunned, and nearly insensible. Ronayne saw at a glance that the only way to help him was himself to go down, extricate his bruised legs from the rocks and wreck that held him like a vice, and then assist him to climb from his perilous position. This, by means of much pulling and hauling, he at length accomplished, and ultimately had the satisfaction of leading the poor fellow to a place of safety, where, for a time, he left him, sorely bruised, faint, and well-nigh frozen, for the others, who had never ceased calling for assistance from the moment of his arrival. They were four in number, and, as far as could be judged through the increasing darkness, lay in the very gorge down which rushed the swollen stream; and so it proved, for one was hanging to a spar which had become fixed in the rocks, while another was grasping a projecting crag, by which he contrived to keep afloat. The others, more fortunate, had been thrown on a ledge, which left them in comparative safety, though they were waist-deep in water. But though secure upon this ledge, they were quite as helpless as their companions, for the beetling face of the rocks defied their utmost efforts to scale them unaided. Here Ronayne's knowledge stood him in good stead, and after much active assistance in the shape of climbing, swimming, pulling, and scrambling, he succeeded in rescuing one after the other, each assisting afterwards to make the task easier. Five men stood beside him, cold and hurt, but saved by his perseverance and bravery from a watery grave.

"But," says the narrator—and here especially he should tell his own tale—"not without great labour had this been effected, for one of the men had his leg broken, and all were more or less bruised, and perishing of cold and exposure. Three men were at his house and five here; but where was the other? for nine men were on board the luckless vessel, and here were but eight. Leaving the rescued men in the

lane, Ronayne ran again to the cove, and the dim spark expiring in the turf showed him where he had left it. He scraped off the ash, and, the wind fanning it, again it burned up brightly—too brightly, for now it burned down to his frozen fingers; but he only grasped it the tighter, for did it not light him on his errand of mercy? and if another life might be saved at the expense of a few burns, would it not be great gain? So on sped he along the shore, searching into every cranny and cleft and crevice lighted by the turf, and, burning and shouting between his labours, at length was rewarded by a faint cry



THE "NORTHFLEET."

as of a man in distress—more a moan than a cry, and at a distance. Rapidly but carefully he had scanned the beach, and partially searched every gully and cleft, and now and again receiving to his cries a faint response, but always from far away. No doubt the man was out on the rocks, to which he had been carried by a receding wave after the ship struck, and Ronayne knew that some further help must be procured before he could be reached. So he hastened back to the five men he had left in the lane. They then all proceeded to the farm-house—a melancholy *cortège*—carrying as best they could the helpless between them. He then started off, wet and weary as he was, to the coastguard station at Bonmahon, where he gave information of the wreck, and demanded assistance for the poor fellow out on the rocks." The coastguard men lost no time in turning out with the rocket apparatus; but just as they were fixing it in position, Ronayne, who had been

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hunting about, came upon the very last and ninth man of the crew, lying, half in the water and half out, upon the beach among a quantity of wreck. His supposition had been correct in regard to his position on the rocks, but while assistance was being procured he had been washed ashore, with shattered limbs—bruised, helpless, unconscious, but *alive!* The poor fellow, who remained unconscious, was carried to the farm, where some old whisky-jars were filled with hot water and placed to his feet. The little whisky in the house was divided among the benumbed men, and more solid provision set before them.

And now Ronayne's house contained over twenty inmates, most of them standing round the turf fire wringing the water from their clothes and warming their frozen limbs; the few beds, too, had their occupants. For Ronayne the work had but barely commenced. Saddling his young mare, he started to lay information of the wreck before Lloyd's Deputy Receiver at Tramore, some *twelve miles* distant, for eight shillings were to be earned, and for this trifling reward he was prepared to ride some twenty-four miles on a cold winter night.

On his road he passed the doctor's house, and sent him to attend the injured men, arriving at Tramore a few minutes before the telegram from the coastguard station. Two of the sailors were afterwards removed to the hospital, and recovered, and they and the remainder cared for by the Shipwrecked Mariners' Society's agents. Ronayne was indemnified for any expense he had incurred by the same Society, and the Life-boat Institution shortly after rewarded him.

CHAPTER XX.

SHIPS THAT "PASS BY ON THE OTHER SIDE."

Captains and Owners—Reasons for apparent Inhumanity—A Case in Point—The Wreck of the *Northfleet*—Run down by the *Murillo*—A Noble Captain—The Vessel Lost, with a Hundred Ships near her—One within Three Hundred Yards—Official Inquiry—Loss of the *Schiller*—Two Hundred Drowned in one heavy Sea—Life-saving Apparatus of little use—Lessons of the Disaster—Wreck of the *Deutschland*—Harwich blamed unjustly—The good Tug-boat *Liverpool* and her Work—Necessity of proper Communication with Light-houses and Light-ships—The new Signal Code and old Semaphores.

FROM time to time there appear in the public journals accounts given by sailors who have been saved from imminent peril from drowning by passing ships. Many and many an honourable case could be cited; but there are, alas! ships that "pass by on the other side." An article in the journal* issued quarterly by that grand society the National Life-boat Institution explains some of the reasons for this sad state of affairs. The writer generally denies that the majority of the masters of ships who would pass another vessel in distress are brutal or callous, and thinks that were many of them brought face to face with an isolated case of probable drowning, they would not hesitate to expose their own lives to preserve the one endangered. There must be some strong causes operating on the minds of the men who act in the inhuman manner indicated. Among them are the following:—

"1st. That the loss of time which the most trifling service of this kind causes would

* *The Life-boat : a Journal of the Life-boat Institution.* November 2nd, 1874.

possibly represent a very considerable money loss to the owners, by the delay in the arrival in port of the ship and cargo.

"2nd. That the cost of maintenance of the persons saved is insufficiently repaid by the Government.

"3rd. That in all but the largest kind of ships the amount of food and water habitually kept on board is rarely sufficient to meet the strain of, say double, or, it may be quadruple, the number of men they were intended for; and if a ship of the smaller class, towards the end of her voyage, has to take on board the crew of a vessel greater in number than her own, she is, from shortness of provisions and water, in nine cases out of ten, compelled to make for the nearest port, which may be a cause of incalculable loss, unless it chances to be the one she is bound for.

"4th. Every captain knows that all owners are more or less inimical to their ships rendering either salvage service or life-saving service. Not, as we suppose, that any owner deliberately sets to himself the axiom that no ship of his shall save life, but that they, not unnaturally, view with suspicion salvage service, because they can receive nothing from it but loss in time and money; and cases are not infrequent in which pretence of saving life is made a source of real loss to the owners."

One case among the many which could be presented is here given. It appeared before the magistrates of Falmouth in 1873, in consequence of the refusal of a crew to proceed to sea. The ship had come from a Chinese port to a port in Europe: it being uncertain, from the fluctuating state of the market, which it would be. The vessel fell in with a distressed ship, from which she took seventeen persons. When in the entrance to the English Channel, the captain found himself short of provisions and water, and put into Falmouth, to land the shipwrecked crew and replenish his provisions. His own crew thereupon claimed their discharge, as having arrived "*at a port in Europe.*" The Bench ruled the men's claim to be just, and it took the captain a fortnight to obtain a fresh crew, to whom higher wages had to be paid. "The actual and immediate loss to the owners, by this act of humanity of their captain, was stated at £270. The only reimbursement was the usual State grant for feeding so many men so many days, amounting altogether to £16 and a few shillings." The delay in delivering cargo entailed a heavy loss, and having put into a port not named, she had, it was said, vitiated her policy. How might the owners feel towards that captain in future? And again, how might he feel next time, when duty called him one way and interest the other? In an indirect way, this and foreign Governments recognise humane services of the kind indicated by presents of telescopes or binocular glasses. Such recognition is undoubtedly valued by the sort of men who would do their duty under any adverse circumstances, and whether they were to be thanked or no; but it is to be feared that captains who were as unfortunate as the one at Falmouth might think twice before they performed that which their consciences could only approve as right.

The owner of the relieving vessel should have the right of being recouped to the full extent of the loss incurred by delay and service—though many would never accept it; and a ship's insurance should never be vitiated by its calling at a port on a matter of any such necessity as landing a shipwrecked crew or obtaining provisions. It is certain

that we should do all that is possible to reduce that annual list of ships whose only record is "Not since heard of."

A successful mail-steamer passage or quick run, the first clipper from China with the season's tea, make not only a certain stir in a pretty wide circle, but represent a considerable increase of actual wealth. The despairing cry of those few poor seamen—who, in their sinking craft, or who, perishing from hunger or thirst, see fading away on the distant horizon the white royals of some lofty ship which they had watched with such agonising alternation of hope and despair—is heard by God alone.

The wreck of the *Northfleet*, and loss of life to over 300 souls, on January 22nd, 1873, will illustrate some of the above remarks.* The *Northfleet* was a fine old ship of 940 tons, built at Northfleet, near Gravesend, and so named. After various vicissitudes in the service of Dent's China and other lines, she had become the property of Messrs. John Patton and Co., of Liverpool and London, and was at the time of which we are about to speak chartered by the contractors of the Tasmanian Line Railway to convey 350 labourers and a few women and children to Hobart Town. The vessel left the East India Docks on Friday, the 17th December, 1872, with a living freight of about 400 persons. The cargo consisted principally of railway material. At the very last moment of leaving the docks, her commander for the previous five years, Captain Oates, was subpoenaed by a Treasury warrant to attend the Tichborne trial, and the command was given to his chief officer, Mr. Knowles. He was allowed to take on board the lady to whom he had been married about a month.

After leaving Gravesend the *Northfleet* encountered very stormy weather, and Captain Knowles felt it prudent to anchor under the North Foreland, where the vessel remained until the following Tuesday, when, the weather having moderated, she sailed down Channel, and was reported at Lloyd's as having passed Deal, "All well" being the signal. On the Wednesday, at sunset, she came to an anchor off Dungeness, about two miles from shore, in eleven fathoms of water. She was then almost opposite the coastguard station. About ten o'clock the ship was taut and comfortable for the night; almost all the passengers had turned in, and none but the usual officers and men of the watch were on deck. Just as the bells were striking the half-hour past ten the watch observed a large steamer, outward-bound, coming directly towards them. She appeared to be going at full speed, and the shouts of the men on watch who called upon her to alter her course roused Captain Knowles, who was on the after deck. But in another moment the steamer came on to the *Northfleet*, striking her broadside almost amidships, making a breach in her timbers beneath the water-line, and crushing the massive timbers traversing the main deck.

"Midst the thick darkness, Death,
The dread, inexorable monarch, stalked;
And, lo! his icy breath
Encircled the devoted barque, where talked,
Or laughed, or watched, or slept,
The doomed three hundred of her living freight,

* The following account is based mainly on the reports published in the *Times*.

Unconscious that there crept
Through the still air the stealthy steps of Fate.

* * * * *

" Oh God, that fearful crash !
The stout ship reels, her planks disrupted wide ;
Fast through the yawning gash
The green sea pours its dark, resistless tide.
What followed then, O heart,
Thou scarce may'st realise ! 'Tis well for thee :
Ne'er would that sight depart
From gentle mind that had been there to see.

" For maddening terror reigned ;
Honour, and manhood, and calm reason fled,
And brutal instincts gained
The mastery ; and even shame was dead.
Each one, to save his life
Would give to death the lives of all beside ;
Nor cared in that fell strife
What awful end his fellows might betide.*

" Yet 'mid that wild despair
Nobility of soul found room to stand,
And lustre bright and rare
Enfolds the memory of Knowles and Brand ;
Who, face to face with death,
Save of dishonour, showed no coward dread,
Brave hearts to the last breath,
They joined the galaxy of Britain's dead."

The shock was described by the survivors as like the concussion of a very powerful cannon. The reader will here make his own reflections. Immediately after the collision the steamer cleared the ship, and before many of the terrified people below could reach the deck she was out of sight. Most of the passengers were awakened by the shock, and a fearful panic ensued. Captain Knowles acted with singular calmness, promptitude, and decision. He caused rockets to be sent up, bells to be rung, and other signals of distress ; but the gun to be fired would not go off, the touch-hole being clogged. Meantime he directed the boats to be launched, giving orders that the safety of the women and children should be first secured. There was a disposition to set these orders at defiance, and, on some of the crew crowding to the davits, with a view of effecting their own safety, Captain Knowles drew a revolver, and declared he would shoot the first man who attempted to save himself in the boats before the women were cared for. Most of the crew seemed to understand that the captain was not to be trifled with ; but one man, Thomas Biddle, refused to obey the

* A part of the crew behaved in a most cowardly manner, and thought only of saving themselves, although Captain Knowles and Mr. Brand, the chief officer, who stood nobly by their posts, did all in their power to shame these recreants, and themselves went down with the ship. The lines quoted above were written by a graduate of Pembroke College, Cambridge, whose promising career was cut short by death at an early age. The poem, described as "A Fragment," is given in full in *The Lifeboat* for February 1st, 1878.

order, and the captain fired at him in a boat alongside the ship. The bullet entered the man's leg just above the knee.

Meantime the pumps were set to work, but with little or no effect, the water pouring in through the opening in the ship's side. The scene on deck was frightful. Many of the passengers were in their night-dresses; others had only such scanty clothing as they could secure on quitting their berths. Children were screaming for their parents, and parents searching in vain for their children; husbands and wives were hopelessly separated.



WRECK OF THE "NORTHFLEET."

The horror was increased by the darkness of night. The captain's wife was placed with other women in the long-boat, under the charge of the boatswain; but the tackle being too suddenly set adrift, the boat was stove in.

By this time the *City of London* steam-tug, having perceived the signals of distress, reached the spot, and succeeded in rescuing nearly the whole of the occupants of the boat, as well as several others of the passengers and crew, to the number of thirty-four. She remained cruising about the spot till early next morning, picking up such of the passengers as could get clear of the wreck, and in the last hope, which proved vain, of rendering assistance to those who might have floated on fragments of the ship after she settled down. The Kingsdown lugger *Mary* was likewise attracted by the signals of distress, and succeeded in rescuing thirty passengers. The London pilot-cutter No. 3, and the *Princess*, stationed at

Dover, also got to the spot, and succeeded in rescuing twenty-one, ten of them from the rigging. The total number thus rescued was eighty-five persons.

The ship went down about three-quarters of an hour after she was struck, the captain remaining at his post till she sank. One of the survivors states that he was standing close to the captain when she went down. The former managed to lay hold of some floating plank, and was borne to the surface. The captain, however, was not again seen. The pilot and ten others had taken to the mizen-mast, from which they were rescued. The whole of the officers perished.

It must seem remarkable that while the *Northfleet* showed lights and other signals of distress within two miles of shore during twenty minutes or half an hour no notice was taken of them. When a ship is in difficulties in the night, it is usual for her either to fire guns or to exhibit a flare of light. But here, even the vessels close at hand thought that the ship was only signalling for a pilot; and at the time there were nearly a hundred vessels at anchor in the roadstead, with their lights burning brilliantly. Those on board the three ships nearest the wreck would have instantly sent help had they imagined there was a vessel in distress, and they could have got to the ship in a few minutes, for, though the night was dark and squally, it was clear at intervals, and any boat could live, the sea not being rough. It appears that the *Corona*, an Australian clipper, was lying at anchor within 300 yards of the *Northfleet* when the disaster occurred, but neither the terrible shock of the collision, the subsequent cries for aid, nor the rockets continuously fired the deck of the sinking ship, could arouse the man who was the only watch on deck. call up either his comrades or the officers of his ship. Various reports were at first current as to the name of the vessel which ran the *Northfleet* down, and which passed straight on her way, without taking any heed of the disaster she had caused, though it must have been clearly known on board of her, if not—it is to be hoped—to the full extent of the calamity. Suspicion attached to the *Murillo*, a Spanish steamer, bound for Lisbon from Antwerp. The *Murillo* arrived at Cadiz on the evening of Thursday, the 30th, having stopped at Belem, the entrance to the port of Lisbon, on the day before, and having then been warned by a telegram to go on to Cadiz without landing her Lisbon cargo. Upon her arrival at Cadiz an official inquiry was commenced, at the instance of the British Consul. From the report of Mr. Macpherson, Lloyd's agent at Cadiz, it appeared that her starboard bow had been newly painted black and red to the water line, and her port bow showed marks of a slight indentation near the anchor davit. It was stated, however, on behalf of her owners, that the painting was done in London or Antwerp, before she started on her present journey, and that the indentation had been made on entering the port of Havre two years before. An inquiry was instituted in the Spanish Courts, and the committee appointed for that purpose declared that the *Murillo* was not the vessel which ran down the *Northfleet*. The *Murillo* was therefore released. But some time afterwards justice was avenged.

The official report of the inquiry made—at the instigation of the English Government—by Mr. Daniel Maude, stipendiary magistrate, assisted by Captains Harris and Hight acting as assessors, stated that there was no doubt that the ship which came into collision with the *Northfleet* was the Spanish iron screw-steamer *Murillo*, trading between London

and Cadiz, which left London on the 12th of January, proceeded to Antwerp, and, after leaving that port, arrived off Dungeness on the night of January 22nd. The *Northfleet* was anchored in an apparently most safe position, a mile and a half or more inside the usual fair course for vessels outward-bound. The *Murillo* came down inside the *Northfleet*, and struck her nearly amidships. It would appear, both from observation on board the *Northfleet* and also from the evidence given by the chief engineer of the *Murillo*, that the latter had slackened her speed some little time before the collision, or probably both ships would have sunk. There is no doubt the shock was a slight one; but the sharp stem of the iron steamer having struck the weakest part of the wooden ship will account for the mischief done. The master of the *Murillo*, in his log, stated that the reason for not laying by to inquire as to the injury sustained by the shock was that a boat had immediately left the ship and examined the damage, and that the boat and crew having returned again, he concluded nothing of moment had happened. The Court was satisfied that no such incident had occurred, nor was it mentioned by the witnesses who had previously been examined by the Court. The survivors of the collision were unanimously of opinion that if the *Murillo* had lain by, the whole of the *Northfleet* people could have been saved. They thoroughly believed that the *Murillo* steamed away, and left them to perish, in defiance of their signals, rockets, blue lights, and the shouts and screams of the whole ship's company, which must have been noticed. On the other hand, it appears that Captain Knowles did not apprehend immediately the damage his ship had suffered, and that no rockets were fired for a quarter of an hour after the collision. During this time the *Murillo* was steaming away at half-speed, and was probably two miles off. Upon this evidence the Court felt they ought not to impute to the captain of the *Murillo* the full apparent brutality of his offence in not staying by the injured ship. The Court added a strong expression of opinion that no master of a ship should be allowed to take his wife to sea with him.

On Friday, the 7th of May, 1875, one of those sad events occurred which show the imperfection of many of the most carefully-devised schemes for life-saving at sea. Although it occurred in British waters, neither the ship nor the larger part of the passengers were British subjects. The *Schiller* was a fine iron steamship of 3,600 tons, belonging to the Eagle line of Hamburg; she was nearly a new vessel, having been built at Glasgow in 1873. She left New York on the 27th of April, having on board at the time 264 passengers, while the officers and crew numbered 120 souls. All went well till the 7th of May, on which day she was due at Plymouth, when, in the afternoon, a fog set in; nevertheless, the vessel was kept at full speed until 8.30 p.m., when the density of the fog having greatly increased, she was put at half-speed, and an hour after she struck on the Retarrier Rocks, off the Scilly Islands, and within two-thirds of a mile of the lighthouse on the Bishop's Rock. Although going at slow speed at the time, and although the engines were immediately reversed, the unyielding rocks had done their work: the ship was immovable, and immediately filled. All was at once confusion, and a panic ensued, cries of terror rising from every lip. Orders were given by the captain to lower the boats, and until he was himself washed off the bridge, at about 4 a.m., and drowned, he did his best to preserve some order, even threatening the frantic crowd with his pistol.

All the boats, however, except two, were swept away by the sea before they could be lowered, many perishing with them, and one was crushed by the funnel falling on it. The ship held together for several hours, and had there been any means of making their hopeless condition known at St. Mary's, the chief of the Scilly Islands, a steamer, and a first-class lifeboat* belonging to the National Lifeboat Institution, might have arrived in time to save a large number of lives. Such, however, was not to be, and when the morning dawned all that remained of the crew and passengers who, a few hours before, had been looking forward to happy meetings in the Fatherland with fathers, mother, sisters, brothers,



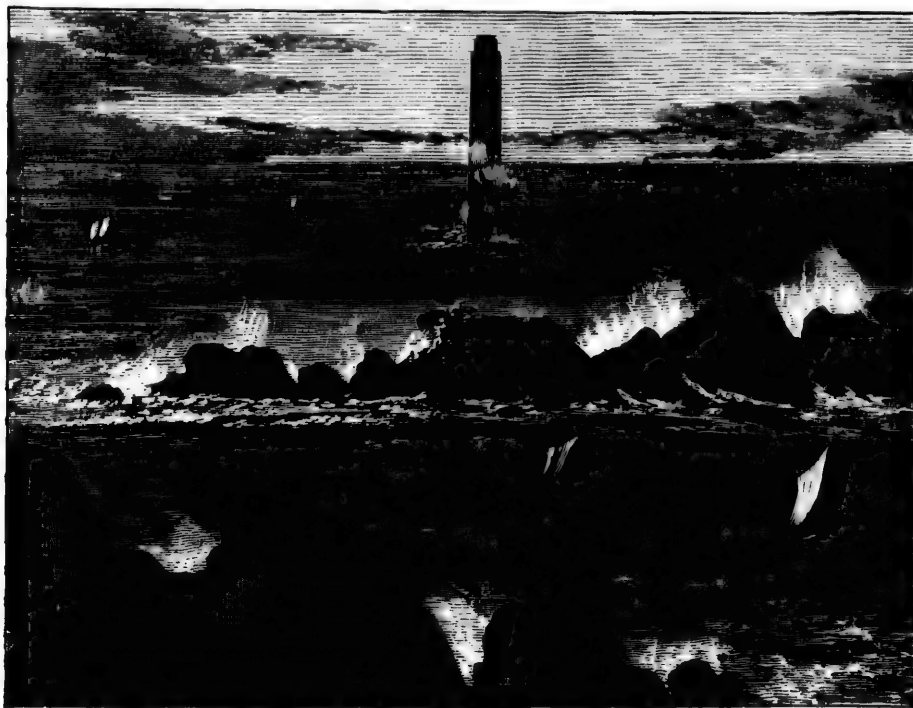
THE SCILLY ISLANDS.

and friends at home, were those who had succeeded in mounting the rigging of the fore and main masts, and a few others in the half-swamped boat, the only one which had been safely lowered. The women and children who had crowded the deck-houses and saloon, and the male passengers and those of the crew who were on the upper deck or the bridge, had perished. Alarm-guns were fired and signal lights thrown up continually, until the seas breaking over the ship prevented such efforts attracting attention; and some of the former were heard on the islands, but as steamers from America had been in the habit of firing guns to mark their arrival off the islands, they were not supposed to be danger signals. It is said, however, that at St. Agnes, the nearest island to the wreck, the guns were believed to be from a vessel in distress, but the fog was so thick that boats were afraid to venture out.

The mainmast fell at about seven o'clock in the morning, and the foremast an hour

* Vide *The Life-boat*; or, *Journal of the National Life-boat Institution*. August 2, 1875.

later, when most of those who remained in their rigging were lost. Just before the fore-mast had fallen, four boats from the shore arrived, and picked up several persons from the water, but finding the sea too heavy to allow them to go alongside the ship, one of them went to St. Mary's, to convey intelligence of the disaster and to procure the aid of the steam-tug and lifeboat. As soon as possible the latter arrived in tow of the steamer, but all, alas! was then over, and they only picked up twenty-three bags of mail matter and a few bodies. Out of 384 souls only 53 were saved.



THE BISHOP ROCK LIGHTHOUSE.

It was about ten o'clock in the evening when the ship struck. A little festive party had been given in honour of the birthday of one of the officers, but there is no evidence to show that the working of the ship was thereby neglected. The majority of the passengers were on deck, on the look-out for land, which they knew was near. Nearly all the women and children and a few men were in their berths; others were sitting about, talking, smoking, playing cards or dominoes, and thinking little of the fate which was so soon to befall them. There was not the slightest premonition of the disaster, and the shock appears to have been so slight that few were at first aware that the ship had struck on a rock. But in a few minutes the sea which ran over her forced her on her broadside, where she lay constantly

washed over by the breakers. Let the reader imagine, if he can, the sudden change from the gaiety and hopefulness on board, the anticipations of soon reaching shore and home, to that scene of wild terror and dismay!

About midnight the funnel fell overboard and smashed two of the starboard boats. Soon after the fog cleared away, and a gleam of hope arose when the bright clear light of the Bishop Rock Lighthouse shone out. But it was only momentary, and dense darkness soon surrounded them. When the deck-house was swept away by a sea so heavy that it ran up to the top of the mainmast, a heartrending cry, mingled with shrieks and groans, rent the air. Nearly two hundred perished by this one catastrophe. Then the captain gathered for safety some people on the bridgeway, the highest place, in the vain hope of saving them. Every one, including the captain, engineers, and doctor, were swept off. The riggings of both masts were now crowded with people. With every lurch the steamer careened over to the starboard side until the yards touched the water, and the cargo began to float about on all sides. Bales of wool and cotton, feathers, trunks, boxes, and woodwork of all kinds, strewed the waves.

A survivor—one of seven who left the ship in a boat and was afterwards instrumental in picking up others—said that they cruised about the greater part of the night near the vessel, and that the screaming all the time was heartrending, and lasted almost from the commencement of the disaster to four o'clock in the morning, when it ceased. Alas! by that time nearly all had gone to their long account. The last screams he heard, and which he could never forget, were from a little child. Mingled with all was the cracking of the ship's timbers as wave after wave broke over her. One by one the lights disappeared, till, at three o'clock, not one was left but the masthead light.

A proportion of the bodies only were recovered, among them those of several ladies wearing valuable jewellery; one had £200 in money upon her, which she had endeavoured to save. That with 1,200 life-belts on board so few should have escaped seems nearly incredible; but the panic and other circumstances help to account for the sad fact. The second mate stated that he had much trouble in getting the passengers to understand the importance of wearing them well under the armpits, and that if the belt got below the waist it would at once force the head under water. From the position of some of the corpses recovered, it is evident that many must have perished in this manner. In a number of cases the lower strings of the life-belts had broken. The larger part of the dead were buried on the various islands of the Scilly group.*

The main features of this disaster teach some important lessons. "We find," says a writer in *The Lifeboat*, "in this instance, a noble ship, under full control of steam and sail; the captain† an able, experienced, and careful officer, whose devotion to his duty

* The Scilly Islands, thirty miles from the Land's End, are 140 in number, and range in extent from one to 1,600 acres, several of the larger being fully inhabited. They are flanked by the grandest rock scenery, and surrounded by reefs and rocks innumerable.

† Captain Thomas had, we were told on other authority, navigated the *Schiller* across the Atlantic and past the treacherous Scillies eight times. He imagined himself to be far from a point of danger; and old sea-captains assert that it is not uncommon for a vessel to be in advance of her commander's calculations—in other words, she may plough through the water faster than he is aware. In this case the sun had been absent for three days, and the course had been kept by dead reckoning.

and sense of the responsibility thrown on him were shown by the fact of his not having had his clothes off for five nights previous to the loss of his ship; and the weather fine, with the exception of the prevalence of a dense fog.

"If we further inquire whether the owners of the ship had done their duty in providing their passengers with all available means of safety, we find that she had an ample and competent crew, had eight boats, six of them being life-boats, and that life-belts more than sufficient for every one on board were provided, and were to a large extent used, since all, or nearly all, the bodies that were picked up had life-belts on them. The latter may, however, have been of inferior quality—indeed, are said to have been so. With so many elements of safety, what then caused them to be of no avail?

"The immediate causes of the loss of the ship were apparently the dense fog and an insufficient allowance for the set of the well-known current which sets out of the Bay of Biscay to the northward, across the entrance of the British Channel, which has sometimes considerable strength.

"A secondary cause was the old offence, so general in the merchant service, despite all the warnings of experience—neglect of sounding, the lead not having been used during the day or night, nor on the two previous days.

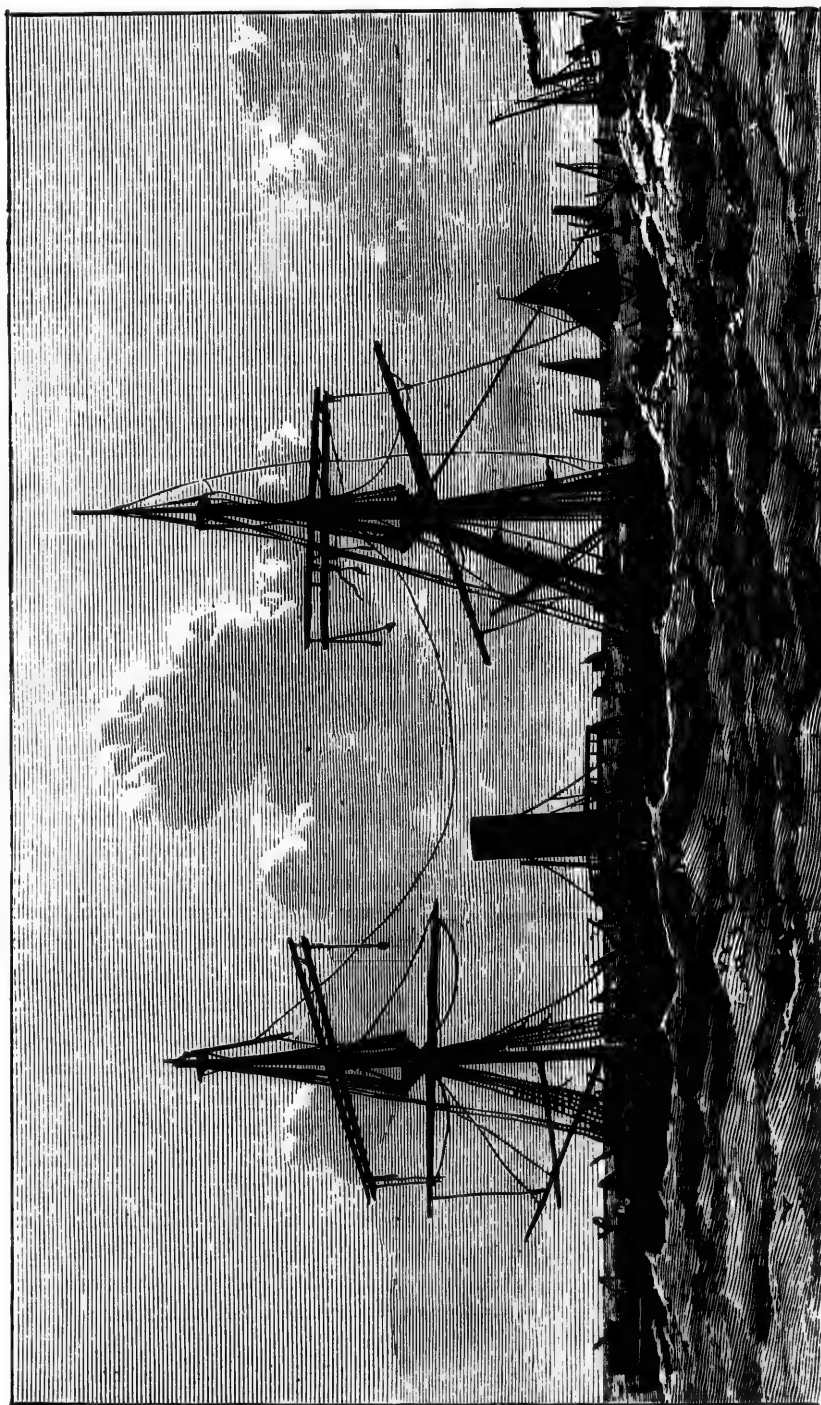
"Lastly, the chief cause of so few lives being saved, there can be little doubt, was the same as that which led to such fearful results in the case of the *Northfleet*, viz., the custom of making use of night signals of distress for other objects, such as to call for pilots, to signify arrival, &c., a folly admonished in advance in the old fable of the boy raising the alarm of 'Wolf, wolf!' when there was no wolf, and then receiving no succour from his neighbours when the wolf came.

"It appears to be customary for the German steamers to make the Scilly Islands to enable their agents there to telegraph to Plymouth the approach of their steamers, in order that the necessary preparations should be made for a prompt disembarkation of their passengers for England on their arrival at that port.

"The saving of time, which, looking to the great daily expense of such vessels, with their hundreds of mouths to be fed, and their immense consumption of coal, is the saving of money to the shareholders, and is, of course, the motive for communicating by signal with Scilly, just as the maintenance of high speed in all weathers, and by night as by day at all hazards, is so, and which leads to so many disasters.

"All that we would suggest, in the interest of humanity, is that such communication should be left discretionary with the captain of every ship in the case of fogs, when it should be optional for him to proceed directly for Plymouth, or to heave to, or to feel his way at greatly diminished speed by frequent sounding, which would be a certain guide to him for a distance of many miles round the islands." The writer suggests that, in view of the too common neglect of sounding, such neglect, when discovered, should be punishable by heavy penalties. It was proved in evidence that the Eagle line of steamers were expressly prohibited from firing guns, or exhibiting other distress signals, to make themselves known, but that other German steamers had done so, of which those on board this unfortunate ship now reaped the evil consequences.

On the morning of the 6th December, 1875, one of those sad disasters occurred which



WRECK OF THE "DEUTSCHLAND."

ever and again remind us of the dangerous nature of our shores. But a few months before the *Schiller* had been wrecked, with the loss of 331 lives, and now an emigrant steamship, of the same nationality, was to share the same terrible fate off the Essex coast. Happily, the loss was not so serious, and led to the establishment of a life-boat station where one had not existed before.

Few maritime disasters of modern times have excited more general interest than the wreck of the *Deutschland*: partly from the fact that it occurred so near the mouth of the Thames, and partly because a part of the German press, in a strange and reckless manner, advanced serious charges against the town of Harwich and the boatmen of that port, accusing them of allowing the unfortunate emigrants to perish before their eyes, and refusing them succour. The circumstances are as follows:—In the first place, the spot where the *Deutschland* was wrecked—on the Kentish Knock—is twenty-four miles from Harwich, and, therefore, at too great a distance for the vessel herself, and far less for any signals of distress or national flag to be seen from that place, even in clear weather. "Accordingly, the only modes by which intelligence of the disaster could be conveyed to Harwich would have been by the different light-vessels repeating the signals from one to another, and finally to that town, or by some vessel or boat proceeding there. Now it so happened that all the hovelling smacks belonging to that and adjacent places had themselves been driven into port by the violence of the gale and the heavy sea, and that the only available means of communication was, therefore, by signals from the light-ships. It appears from the evidence of the officers in charge of those vessels at the Board of Trade inquiry, although the *Deutschland* had been on shore since five and six o'clock in the morning on Monday, the 6th of December, and had immediately commenced to throw up rockets, and continued to do so until daylight, none of them were seen even from the nearest light-ship—the Kentish Knock—no doubt, owing to the thickness of the weather and almost continuous snow-storms, the master of that vessel first perceiving the unfortunate steamer at 9.30 a.m. He then fired guns, sounded the fog-horn, and continued to do so at half-hour intervals during the day, and at 4.30 p.m. commenced to throw up rockets, which were answered by the steamer.

"At 5.20 the mate of the Sunk light-ship first saw two rockets, which he supposed to be from a vessel on the Long Sand, whereupon he fired guns and sent up rockets throughout the night, but did not see the wrecked ship until 7.30 on the morning of Tuesday, the 7th. His first rockets had, however, been seen by the look-out on board the Cork light-ship, from which vessel rockets were then immediately discharged; and at 7.30 these were replied to from Harwich, they having given the first intimation to the good people of that town that anything was amiss at sea; and even then not that a German emigrant steamer was ashore on the Kentish Knock, but merely that some vessel was in danger somewhere on one of the numerous sandbanks which lie in all directions off that port. We have thus accounted for the circumstance of these unfortunate shipwrecked persons being allowed to remain for fourteen hours in their perilous position without succour from the shore, from the simple cause that no one knew of their danger; and we have arrived at another stage of our inquiry: viz., Were the means then adopted all that could be reasonably expected from humane people, who would gladly afford succour, if in their power, to any one in distress, to whatever country they might belong?"

The writer of the critical article from which the above quotations are taken* shows, firstly, that there was not at that time a life-boat station at Harwich. It had always been considered that the sands were too distant from that port for the successful employment of such a boat, and that, in the event of wrecks upon them, the numerous hovelling smacks would have anticipated its services. There was, however, a small but serviceable steam-tug—not, be it remembered, Government or town property, but that of a private individual. It is right that this should be fully understood. The circumstance of this tug, the *Liverpool*, not going off instantly on perceiving the rockets thrown up by the Cork light-ship was much criticised by some ignorant persons at the time. “Fortunately, she was commanded by an able and experienced seaman, Captain Carrington, who knew what he was about; who knew the difficulties of navigating in the intricate passages between the numerous shoals off the port on a dark night and gale of wind, and he could only do so at great risk of losing his owner’s vessel and the lives of those intrusted to him; that he might spend the whole night in vainly searching for the vessel in distress, and, even if he should find her, that, with the small tug’s boats, it would be quite impossible for him to render any assistance to a vessel surrounded by broken water, in a dark night and heavy sea; and, moreover, that if any mishap should disable his own vessel, the only chance of saving the wrecked persons might be destroyed.” He judiciously waited till shortly before daylight, and then proceeded, first, to the Cork light-ship, where he ascertained that the Sunk light-ship had been firing all night. He then steamed to the latter, and was misinformed (unintentionally) regarding the locality of the wreck. He, after searching in vain for some little time, steamed for the Kentish Knock, and when half-way to it saw the *Deutschland* on that sandbank. He then went to the Knock light-ship, and hailed her, inquiring whether those on board knew anything about the wreck, or whether there were any people remaining on board her, but could get no information. He soon proceeded to the spot, and, finding there were a large number of persons on board her, anchored his vessel under her lee, at about sixty fathoms’ distance, and sent his boats to her. After taking off three boat-loads, he weighed his anchor, placed his vessel alongside the ship, and took off the remainder of the survivors—173 in all. In spite of the time which had elapsed and the great dangers to which the vessel had been exposed, the loss of life had not been so serious as might well have been anticipated. Fifty-seven poor men and women had, however, perished in the raging waves. The tug† had done her work of saving nobly and well, and had performed it at a time when the hovelling smacks could have done nothing at all. On the same occasion the Broadstairs life-boat proceeded as soon as possible to the scene of the wreck, twenty miles distant, but too late to be of service. In these days of nearly universal telegraphy,

* *The Lifeboat*, &c., February 1st, 1876.

† Shortly after the wreck of the *Deutschland*, the same tug-boat, the *Liverpool*, rescued from certain death the crew of another foreign ship, this time a Norwegian vessel, wrecked on the Ship-wash sandbank; and the Ramsgate life-boat, summoned by telegram from Harwich, was towed by the steam-tug *Aid* no less than forty-five miles to the scene of the disaster—only to find on arrival there that the shipwrecked crew had already been saved by the Harwich tug—and then another forty-five miles on her return. The fifteen poor fellows on board had then been fourteen hours sitting in their boat, with the seas and spray breaking over them through the whole of this terrible voyage in a freezing atmosphere. They landed in a benumbed and half-frozen state, from the effects of which some of them were sure to suffer severely afterwards.

it would seem strange that our light-ships on dangerous sands, and our lighthouses on dangerous rocks, are almost entirely without the means of proper communication with the nearest shores. From the light-ship, indeed, rockets and guns are constantly fired, as we have seen in many preceding examples, but fogs and heavy weather often prevent either from being of service. The expense of connecting *all* of them with the coasts by means of submarine cables might be sufficient to frighten any Government; but some such communication, however costly, should be made with many of those exposed and dangerous spots where shipwrecks are of constant occurrence.

Excellent authorities on maritime matters have strongly advocated the necessity for the establishment of a sound system of day and night signals from all outlying lighthouses, light-ships, and coastguard stations, and the laying of submarine cables to many of the more prominent stations. A formula of "signals of distress" was included in the new "Merchant Shipping Act of 1873," which came into operation on the 1st of November of that year. Prior to that time such signals were too vague and too indiscriminately used to have much value, and sometimes were calculated to mislead. Thus, in the case of the *Northfleet* already cited, 400 of those on board were drowned, "although she was surrounded by other ships, and the rockets which she discharged as signals of distress were seen by the coastguard and life-boat men ashore, but were unheeded, it being a common custom for homeward-bound ships to discharge rockets for pilots, or as *feux de joie* on their safe return from distant lands." The following signals of distress are now required. In the *daytime* the following signals, when used together or separately, shall be deemed sufficient and proper. 1. A gun fired at intervals of about a minute. 2. The International Code signal of distress. This is a square flag with chess-board pattern, blue and white, having beneath it a long triangular white pennant, with a red ball in the centre. 3. The distant signal, consisting of a square flag, having above or below it a ball or anything resembling a ball. *At night* the following signals:—1. A gun fired at intervals of about a minute. 2. Flames on the ship, as from a burning tar-barrel or oil-barrel, &c. 3. Rockets or shells, of any colour or description, fired, one at a time, at short intervals. And "any master of a vessel who uses or displays, or causes or permits any person under his authority to use or display, any of the said signals, except in the case of a vessel being in distress, shall be liable to pay compensation for any labour undertaken, risk incurred, or loss sustained, in consequence of such signal having been supposed to be a signal of distress, and such compensation may, without prejudice to any other remedy, be recovered in the same manner in which salvage is recoverable."

The signals for pilots are also definitely fixed as follows:—*By day*, the "Jack" or other national colour usually worn by merchant ships, having round it a white border, is to be displayed at the fore; *or* the International Code pilotage signal, this consists of two square flags, the upper of which is a blue flag with a white square in its centre, and the lower of which is a striped flag, red, white, and blue, similar to the French flag. *At night*, "blue lights," or bright white lights, are to be flashed at frequent intervals, just above the bulwarks. If these signals are used for any purpose other than that for which they are intended, a penalty, not exceeding twenty pounds, is incurred. Residents at, and visitors to, seaports and sea-side resorts will, from the above description, be able to

judge whether a vessel in the offing is in dire distress or simply requires the ordinary services of a pilot.

In the eighteenth century, the requirements of a maritime country constantly at war obliged the Government to establish a complete system of signals and signal stations all round our coasts. At the conclusion of our wars with France that system was in full force, and at that time the movements of nearly every vessel, friend or foe, were telegraphed from point to point with a facility which contributed in an important degree to the security of the country. "This Government telegraph system was also available for summoning such aids as then existed for the preservation of life from shipwreck. Accounts of wrecks at what may be called the life-boat era all tend to show that the system of coast telegraphy then in existence played an important part in most notable life-boat and other rescues from shipwreck. With the long peace the need for information on the part of the Government as to the movements of its own or other ships became less urgent, though the coast system of signals maintained a precarious existence for many years, to assist the coastguard in protecting the revenue. As smuggling decreased, the coastguard men were reduced in number, and the chain of signallers became broken into gaps, which widened year by year. The final blow was given by railways and electricity to the old line of semaphores stretching between Portsmouth and the Admiralty, and elsewhere, and from headland to headland. But while the Government, by the help of modern invention, enormously increased its facilities of communication with the great dockyards and arsenals, it, conceiving itself to be in no way concerned (we suppose) with the safety of merchant ships or saving life, failed to supply a substitute for the old semaphore system along the coast line; and year by year the evil has increased from the reduction of the coastguard, and the consequent lengthening of the interval on lines of coasts in which watch has ceased to be kept. The result is that during the last twenty-five years, and up to the present time, there has been greater difficulty in communicating along the coast and summoning aid to distressed vessels at all out-of-the-way parts of the coast than existed at the end of the last century.

"The First Lord of the Admiralty or the President of the Board of Trade can converse at leisure with Plymouth, Deal, Leith, or Liverpool, but the Eddystone has no means of letting the authorities at Plymouth know that a ship is slowly foundering before the eyes of the keepers, though the two points are in sight of each other. The light-keepers at the Bishop have no means of telling the people at St. Mary's that a ship full of passengers is slowly but surely tearing to pieces on the Retarrier reef; and the hundreds of vessels that yearly are in deadly peril on the Goodwins, the Kentish Knock, the Norfolk Sands, and elsewhere, have no means of summoning prompt aid from the land, though they are only a few miles distant from it."* The writer notes that the number of cases of shipwreck, where the vessels might have been saved, which reach the National Life-boat Institution is considerable. These come largely from obscure and detached parts of the coasts. A foreign barque was wrecked on the Ship-wash, a sandbank eight miles from land, the nearest port being Harwich, from which its southern end is distant ten miles. The wreck was discovered by several smacks soon after seven o'clock on the morning of January 7th, 1876, and the news of the disaster was in the possession of the coastguards at Walton,

* *The Lifeboat, &c.*, Feb. 1st, 1876.

Harwich, and Aldborough, before ten o'clock that day. Yet the crew were not taken off the wreck till the following morning, after they had been more than twenty-four hours exposed to all the horrors of a pitiless easterly gale, and the momentary expectation of being swept into eternity. So ill-adapted was the system of sending information along the coast that the news did not reach Ramsgate till the next morning, and tug-boat and life-boat then started on a gallant but fruitless expedition, to find that they had only just been forestalled by the Harwich steamer. The Ramsgate men were thus needlessly exposed for fourteen hours in a storm, with the cold so intense that the salt water froze as it fell on the boat. "It is also significant," says a writer in *The Lifeboat*, "that the Aldborough life-boat's crew declined to launch their boat (they being fifteen miles from the wreck), mainly because there were no sure grounds for concluding that the crew were still on board it—information which could certainly have been conveyed by the Ship-wash lightship had it had an electric wire communication with the shore; or, failing that, by properly arranged 'distant signals' visible to the eye." The writer shows that had the information been telegraphed from the point which it actually did reach about 10 a.m., either to the Admiralty or the Board of Trade, or any other public department, assistance could with ease have been sent to the wreck, by orders from London, not the day after, but on the forenoon of the same day. And what might not have been the sad consequences of delay, had the vessel been carrying a lot of helpless passengers instead of nine hardy seamen?

A case occurred shortly after the above occurrence, illustrating the necessity for prompt and suitable communication with land. The steamer *Vesper*, of Hartlepool, was lost on the Kish Bank, four miles south of the Kish light-ship. The crew of this wreck, which struck the bank at 5 a.m., though only *four* miles from the light-ship, six of a coast-guard station on shore, and seven of another point, received no assistance, nor did the light-ship pass the intelligence till 10 a.m., when a boatman at Kingstown saw masts sticking out of the water on the Kish Bank, with signals of distress flying from them. Promptly enough then the life-boat, towed by H.M. steam-tender *Amelie*, proceeded to the wreck, only to find, however, that on the steamer sinking the crew had taken to their own boats, and being unburdened with passengers, had escaped to land. The weather was moderate; had there been a gale, the story might have been far different. What a reproach to our system! first, that the light-ship had no means of signalling for assistance; and, second, that it had no means afterwards of indicating that all hands were happily saved.

CHAPTER XXI.

A CONTRAST—THE SHIP ON FIRE!—SWAMPED AT SEA.

The Loss of the *Amazon*—A Noble Vessel—Description of her Engine-rooms—Her Boats—Heating of the Machinery—The Ship on Fire—Communication Cut off—The Ominous Fire-bell—The Vessel put before the Wind—A Headlong Course—Impossibility of Launching the Boats—"Every Man for Himself!"—The Boats on Fire—Horrible Cases of Roasting—Boats Stove in and Upset—The Remnant of Survivors—"Passing by on the Other Side"—Loss of a distinguished Author—A Clergyman's Experiences—A Graphic Description—Without Food, Water, Oars, Helm, or Compass—Blowing-up of the *Amazon*—"A Sail!"—Saved on the Dutch Galliot—Back from the Dead—Review of the Catastrophe—A Contrast—Loss of the *London*—Anxiety to get Berths on her—The First Disaster—Terrible Weather—Swamped by the Seas—The Furnaces Drowned out—Efforts to Replace a Hatchway—Fourteen Feet of Water in the Hold—"Boys, you may say your Prayers!"—Scene in the Saloon—The Last Prayer Meeting—Worthy Draper—Incidents—Loss of an Eminent Tragedian—His Last Efforts—The Bottle Washed Ashore—Nineteen Saved out of Two Hundred and Sixty-three Souls on Board—Noble Captain Martin—The *London's* Last Plunge—The Survivors picked up by an Italian Barque.

No greater horror can occur at sea than for the good ship to be on fire. At first sight, indeed, it might appear that in the midst of an unbounded waste of waters nothing could be easier than to extinguish a conflagration on board a vessel, but examples already cited in this work have shown the difficulties in the way. Steam-ships have special facilities for pumping water into almost any part of their hulls, yet one of the saddest examples of a ship on fire is afforded in the loss of the *Amazon*, a steam-ship of the first-class.

The *Amazon* was one of a fleet of new vessels placed by the Royal Mail Steam-ship Company on the West India service, and was stated to be, at the time of her launching, the largest *timber-built* steam-ship ever constructed in England. She was of 2,256 tons burden, and fitted with every improvement known at the time; her entire cost was stated at over £100,000. When, on the 16th of December, 1851, she arrived at Southampton, she was regarded as the perfect model of a passenger vessel. In due time she was ready for sea, and having received her crew and engineers aboard, and a little later her passengers and the Admiralty agent with mails, she left Southampton on Friday, January 2nd, 1852. The officers were all tried men, and her commander, Captain Symons, was one of those seamen whom large steam-ship companies are only too glad to employ and retain. He was not merely an officer of thoroughly competent skill, but a man of unbending resolution, a man fitted to be a ruler among men, as should be every commander of a great vessel. Only a few weeks before he had received the thanks of the American Government, accompanied by a present of a silver speaking-trumpet, for interposing, at the risk of his own life, in an affair at Chagres between the Americans and the natives. On this occasion he not only was the means of saving much valuable property, but by his energetic conduct arrested a conflict, which, but for his intervention, might probably have been attended with much bloodshed and slaughter. The *Amazon*, a pioneer of the service she was to inaugurate, left Southampton amidst a considerable amount of *éclat*, and commenced her voyage.

"And so," says the work* from which much of the following account is compiled, "the gallant ship sped on. The wind was right ahead, but her engines were powerful,

* "The Loss of the *Amazon*." By the Rev. C. A. Johns, B.A., F.L.S., &c.

and she passed rapidly through the water. But it is necessary, in order to make clear what follows, to describe the position of her engines and boats.

"The engine-room was about the middle of the vessel, having sixteen boilers—eight in the forward and as many in the after part. There were, consequently, two funnels: one about midships, the other immediately behind the foremast. In those vessels which have but one set of boilers and one funnel these are placed in the after part of the engine-room, while the store-room, containing tallow, oil, and other inflammable materials, is placed forward. But the *Amazon* having boilers at both ends, it happened that the floor of the store-room rested directly on the wood casing that surrounded the upper part or steam-chest of the forward boilers.

"Then, with regard to the boats: most of the older vessels have life-boats resting, bottom up, on the top of the paddle-boxes, according to a plan much approved in the navy, and the smaller boats swing suspended over the water, from two curved iron props, or davits, as they are technically termed, by ropes that, running through a pulley, enable men seated in the boats to lower themselves from the ship's side to the water, when the hooks by which the tackle is attached to the boats may at once be cast off. But as it would be inconvenient that the boats so hung from the davits should be swinging backward and forward with every roll of the ship, ropes are lashed round them and fastened to the bulwark of the vessel, in order to keep them steady. Now, in order to get quit of this latter somewhat clumsy contrivance, as well as to ease the strain of the boat upon the tackling by which it swings, a different mode of fastening was adopted in the *Amazon*. There were the davits as usual, and the common contrivance for lowering the boats into the water; but instead of the undergirding ropes or guys, two iron props were introduced, each of which, branching out at the top into two prongs, received in its groove the keel of the boat, in which she sat as in a cradle, thus taking away all strain from the ordinary tackling. This change in the mode of securing the boats had, however, this effect: that, whereas in the former case the boat's crew had but to lower the boat and themselves into the water, by the new mode it became necessary, before they could do that, to hoist the boat up a few feet till it was got clear of the projecting points of the crutch on which it rested. Of what fatal consequence this necessity was will become too apparent in the course of the narrative."

The machinery was perfectly new, and, as is frequently the case on first trials, became much heated in the bearings: so much so, indeed, that water had to be pumped over them. Whether or not the terrible disaster about to be described resulted from that fact will never be known; it much more probably occurred from some light being dropped upon the waste, &c., of the oil-room. No neglect of duty was attributed to the engineers, who seem to have been exceptionally careful.

About a quarter before one o'clock, Sunday, when the ship was about entering the Bay of Biscay, Mr. Treweeke, the second officer, a most promising and practical sailor, being then officer of the watch, was on the bridge. Just before, Dunsford, quartermaster, had gone the rounds to see that the lights were all out, and had reported that all was right; Mr. Treweeke then was on the bridge, and Mr. Dunsford was standing under him to receive orders. Mr. Vincent, one of the midshipmen, was on the quarter-deck; all was

still as the grave, save the monotonous throbbing of the engines. He happened to look towards Mr. Treweeke at that moment, and saw him leaning listlessly against the railing of the bridge. Suddenly Treweeke started up, and looked earnestly at something apparently issuing from the engine-room. That officer had discovered flames issuing thence, and Dunsford was detailed to call the captain: and although he should have performed his duty noiselessly, he managed, rather boisterously, to disturb some of the passengers. The captain immediately ran out of his cabin, half nude, and after finding that the fire was serious, ran back and put on some clothes, immediately returning to the scene of action. At the same time, Mr. Stone, the fourth engineer, saw fire on the starboard foremost boiler from the iron platform on which he was standing, and instantly gave the alarm. He even attempted to stop the engines, but the smoke was so dense that he was obliged to retreat. One of the men, who was going to the engine-room to warm himself, observed a glare of light in the fore stoke-hole, and on examination found between the starboard fore-boiler and the bulkhead a flame issuing as far as he could see. The firemen's backs were turned at the time, and he shouted out to them, "Don't you see the fire? Why don't you get water?" They did not, however, seem to notice it. He rushed aft, where the hose was kept, and tried to drag it forward, shouting for assistance; but by the time the hose was brought the flames of fire were rushing up through the oil, tallow, and waste store-rooms. The flames were leaping upwards to the deck above. Owing to the smoke, he was obliged to give up the hose, and rush on deck, it being impossible to remain below any longer. The chief engineer, Mr. Angus, and one of his assistants, tried to put on the hose, and kept by it till they could not breathe. Hearing a cry for buckets on deck, Angus ran aft as fast as he could, and the passengers were then breaking open the saloon door to get on deck. Several attempts to get water to the flames were unsuccessful or utterly ineffective.

The second engineer, Mr. William Angus, stated that when he was alarmed by the cry of "Fire!" he was in the act of "blowing off"* the after-boiler, and on coming up the lower platform ladder of the engine-room, ran to set the "donkey" engine (which pumps the ship and keeps the boilers a-going). A blast of smoke stopped him, and when he recovered more or less from the suffocation he attempted to work her, but failed. All the lamps were extinguished by the smoke. Mr. Stone, the fourth engineer, came to his assistance, but was forced to retire. The stokers and others found it equally impossible to remain. One of the survivors described the progress of the flames in the engine-room "as that of a great wave of fire, before which no man could stand and live." He stated that it rushed upon his mind that if the boilers were left in their then state the water would soon become exhausted, and the boilers themselves explode, so he turned on the water into them, and attempted to remove the weights from the safety valves, so as to ease the pressure of the steam. The glass above was cracking with the intensity of the heat. "It was not three minutes from the time that the fire was discovered till the ship was in flames."

Above, on deck, all was horror, confusion, and despair, among the passengers and crew. The flames, having broken out abaft the foremast, rapidly extended across the whole breadth

* In sea-going steam-vessels the salt water employed in the boilers incrusts the sides with a deposit of salt, and it is necessary to "blow off" every now and again, and discharge the water from them.

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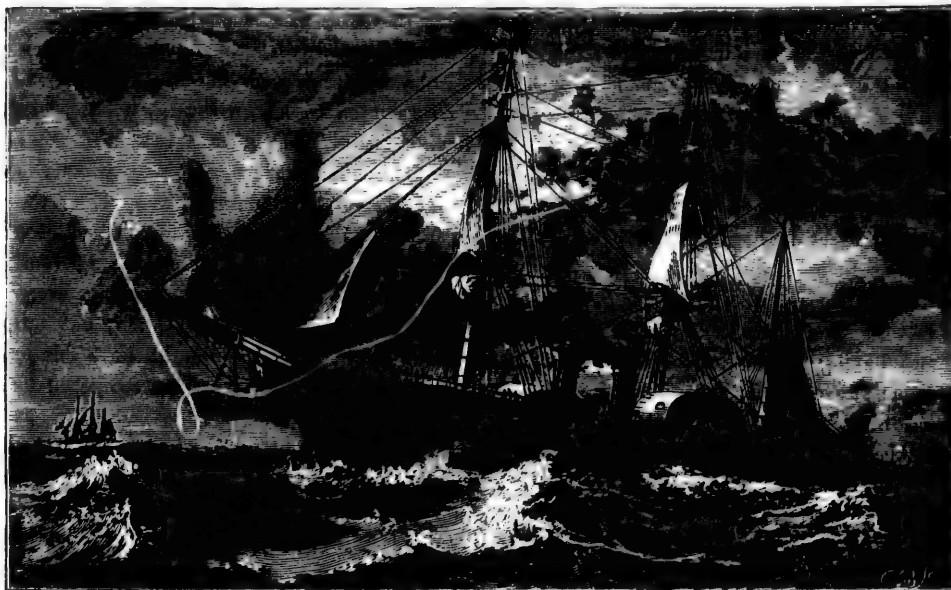


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of the ship, forming a wall of fire as high as the paddle-boxes, cutting off all communication. One or two of the sailors, indeed, managed to get across the paddle-boxes, cautiously creeping up one side and sliding down the other, but all other means of access were effectually debarred. It was the sole chance of safety, for the boats were all in the after part of the ship. "It would be needless here to tell of the screams and shrieks of the horror-stricken passengers, mixed with the cries of the animals aboard; of the wild anguish with which they saw before them only the choice of death almost equally dreadful—the raging flame



THE "AMAZON" STEAM-SHIP.

or the raging sea, and of those fearful moments when all self-control, all presence of mind, appeared to be lost, and no authority was recognised, no command obeyed." Meanwhile the ominous fire-bell was ringing—the knell of many a poor man and woman that night.

When Captain Symons rushed on deck, his first order was to "put up the helm," which was instantly obeyed. The helmsman, assisted by Mr. Treweeke, the gallant second officer, worked at the wheel till the vessel "paid off" and turned so as to go before the wind. The effects of the wind were, by this device, somewhat moderated, but it had almost advanced to a gale, and the paddles were revolving rapidly, carrying the doomed vessel through the water with headlong speed. The flames were driven, however, forward and away from the passengers and greater number of those on board. To this movement, in fact, is to be attributed the preservation of the few boats which, as we shall see, succeeded in leaving the ship. To extinguish the fire was now out of question; while it was equally impossible to shut off the steam and stop the vessel's way. Yet, without this being done, no boat could be launched into the water while the vessel was driving on at

the rate of thirteen knots an hour. Buckets of water were still thrown on the burning mass; trusses of lighted hay and loose spars thrown overboard. "Keep fast the boats for a while, and try to save the ship!" cried the captain. But, alas! ship and crew were alike doomed. "Don't lower the boats!" repeated Captain Symons again and again; and the danger—at the rate of the *Amazon's* speed—of attempting it was too obvious. Lieut. Grylls, R.N., a passenger on board, was attempting to lower the tackle of one of the boats, when Symons "seized him by the arm, and besought him to desist, as he said everybody would be drowned. Lieut. Grylls then called out to the person by the foremast fall, imploring him not to lower, as the ship was going so fast. The person at the foremast fall, by constant and urgent request of the people in the boat, let the fall go, by which means the boat turned over, and, as nearly as could be seen, every one was washed out of her. Seeing this at the moment, Lieut. Grylls attempted to let go the after fall so as to save them, but the fall being jammed, and having fouled, and the boat thus not being clear, her stern hung in the air for a moment, until cut adrift by some one, when she turned over, and, seeing the people washed away, Lieutenant Grylls turned away from the appalling sight in horror. He then met, face to face, Captain Symons, who called out for some one to help him to clear away the port life-boat, which was stowed on the sponson, abaft the port paddle-box, and at the same moment leaped into the boat, using every endeavour to clear her away. Lieut. Grylls followed, and also exerted himself, but the flames having reached the boat, and Captain Symons's hair having caught in a blaze, and one sleeve of his shirt, he was obliged to run off, and Lieut. Grylls was compelled to follow him, both rushing through the flames and fire."

About this time it was discovered that the ship was veering round, owing to the helm having been lashed. A fresh order was shrieked out to keep her before the wind, and two of the officers sprang forward to execute the captain's bidding. The passengers were now all on deck, with what feelings we can imagine. "At last the shout was raised, 'Every man for himself!' but not by the captain. The captain called out, 'Lower the starboard life-boat!' to which the answer was, 'She is on fire!' 'Lower the larboard (port, or left-hand) life-boat!' 'She is on fire!' was still the cry. The captain dropped the bucket which he idly held in his hand. 'It's all over with us!'" But though he knew it so well, he did not relax an effort; nor did Mr. Roberts, the chief officer, nor any of the officers, all of whom went down with the ship. They were last seen collected in a group near the helm; and to the close of that appalling scene nobly did their duty. The last words the captain was heard to say were, "It has got too far." He then turned aft, took the wheel, and that appears to have been the last that was seen of Captain Symons.

When it was discovered that the two life-boats were on fire, attention could only be given to the other boats. All efforts must be made: better to drown than to die in the midst of flames—suffocated, scorched. "One of the passengers, Mr. Alleyne, of the *West Indies*, was observed pacing the deck, with his hands clasped in prayer, patiently waiting that awful fate from which he knew there was no escape. A gentleman and lady, in their night-dresses only—both of which were on fire—came on deck, and, with their arms round each other, walked over to one of the ship's hatches, and fell together into the flames. They had previously been seen standing right abaft and looking perfectly collected, the gentleman before the

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lady, apparently to keep the heat from her. A female passenger rushed on deck, having on only her night-gown, the bottom of which and her legs were much burnt. Three times she was placed in one of the boats which was saved, but she refused to remain. Several persons hurriedly said to her that they would soon give her plenty of clothing when she got away from the ship, but modesty prevailed over the love of life, and she remained behind to perish.

A horrible story of one standing near the helm is given: his face and side burnt, and a huge blister formed, which burst in; the skin was falling away in ribbons. A little boy was also burnt black, and the skin was falling from him in a similar manner. Still the vessel was dashing forward in headlong speed, but still efforts were made to launch the boats; but here, in consequence of the manner in which they were stowed—resting on iron crutches or brackets, instead of being simply suspended, as usual—unexpected difficulties prevented themselves. It was necessary first to raise them, put them over the bulwarks, and lower them—a work of time and labour. In the hurry two of the boats were stove in; and in the case of others, one end would be lowered properly, the other remaining high in the air, so that the wretched passengers and sailors who crowded into them were plunged violently into the water, escaping the fury of one element only to be devoured by another. In one single case fifteen were thus drowned, while one only escaped. Not to accumulate the details of horrors, which constantly repeated themselves, it may be here stated that the whole number of persons on board the *Amazon* when she left Southampton was 162; of these 110 formed the crew; there were 50 passengers, and the mail agent and his servant. The first boat which landed at Plymouth brought in 21; the *Gertruida*, a Dutch galliot, picked up a boat containing 16 on Sunday night, and another containing 8 on the following morning. Another vessel, also a Dutch galliot, picked up 13 more. The total number lost amounted, therefore, to 104, and 58 only were saved.

A survivor stated that during the time they were drifting in their boat towards the ship, which was burning broadside on to the wind, her mainmast went first, the foremast following; it was a considerable time before the mizen-mast fell, directly after which he noted a slight explosion of gunpowder. Previous to this a barque hove in sight, and passed between their boat and the burning ship. They judged her to be outward-bound from her being under close-reefed topsails. As she passed at between three and four hundred yards they hailed her several times with their united voices, strengthened by all the energy of despair. She answered them, and brailed her spanker, and they naturally thought she was preparing to bear up for their rescue. "I shall never forget," said the narrator, "the deep sob of hope with which I noticed these preparations, or the bitterness of feeling with which I saw him spread his canvas to the wind, and wear round past the stern of the burning vessel, as he left us to our fate."

Among those who perished on that terrible night was a distinguished author, whose writings are, or should be, familiar to all readers. Warburton* perished either in the flames or, as some thought, in one of the boats which was swamped. He had been sent out by the Atlantic and Pacific Junction Company, specially deputed to make a friendly arrangement with the Indians of the isthmus of Darien. As an old and practised traveller, he had proposed

* Eliot Warburton, the author of "The Crescent and the Cross," &c., &c.

to stay on the isthmus for some time, in order to study its topography, scenery, climate, and resources. The Rev. Acton Warburton, his brother, on receipt of the fearful news, and with the fact before him that there were boats not yet accounted for which had been seen to leave the ship, proceeded in a steamer from Plymouth on January 17th, in the hope that,



RESCUE OF THE SURVIVORS OF THE "AMAZON."

by cruising about in the Channel and entrance to the Bay of Biscay, some traces might be found of his missing relative. All was in vain; no further vestiges of the crew or passengers were found. A few days afterwards a homeward-bound vessel picked up at sea, among other fragments of the wreck, three settees, or backed forms, which had stood on the deck of the *Amazon*, and which had been lashed together, doubtless for the purpose of supporting some of the crew or passengers in the water. Other pieces of the wreck were washed ashore on different parts of the coast, and a piece of burnt timber was picked up near the Eddystone,

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having attached to it a fragment of a lady's dress. One of the mail bags, containing newspapers, unscorched, but very much damaged by sea-water, was washed ashore near Bridport three weeks after the occurrence of the wreck.

The Rev. William Blood, who was one of the survivors, was landed at Plymouth in one of the boats late on Thursday night, and was much too ill to commit his thoughts to paper during the Friday and Saturday following. But on the Sunday following, in presence of 4,000 people, he, in the course of an extempore sermon, gave his hearers a graphic description of the catastrophe and of his escape from the wreck.* The first evening of the voyage he sat up till between eleven and twelve o'clock, enjoying the sea-breeze and the beauty of the scene. He had then retired, undressing himself as at home, and had slept well. On the fatal night, however, he seems to have had an indefinite presentiment that something was about to occur. On that evening, says he, "without any cause, I was induced to retire early (nine o'clock), and when going to bed it was deeply impressed on my mind not to undress. I accordingly lay down upon the bed with my clothes on, even my boots, and immediately fell into a sound sleep. At about half-past twelve I awoke, greatly refreshed, and prepared for what was to follow. No voice awoke me; no alarm had been given; no bell aroused me. When I awoke, I felt surprised by a peculiar indescribable sensation as of solitude, of vacancy; and on opening the window of my cabin, I looked out, but saw no person; still all was silent; and with the same feeling I arose, went out of the cabin, without even taking my watch, which lay beneath my pillow, and, as I passed along the saloon, I overheard the voice of the stewardess in the distance, saying, 'The ship is on fire!' I then hastened towards the stairs at the fore part of the ship, and saw (oh, horror!) the blaze ascending right across the vessel. I ascended the stairs just in time to escape the flames. When on the deck, I had merely time to walk across to the bulwarks, for on the deck the flames were spreading with terrific rapidity.

"When I got on deck I saw no one, and heard no noise or confusion, so that much of the disaster must have been over by that time. I then saw some men endeavouring to lower one of the boats near the paddle-box, and at the same moment I became fully aware of my awful position, and that I had to choose between death by fire or by water, unless I made some effort to save myself. With this conviction on my mind, I laid hold of a rope, and swung myself over the ship's side, and was just about to precipitate myself into the boat beneath me, which was then swinging with her stern in the water. In another moment her human freight were in the death struggle in an element not less terrible or destructive than that from which they had been making such frantic efforts to escape; and even at this moment their appalling shrieks, as they struggled amidst the dark and gloomy waves, seem to ring in my ears. Here, again, I think Divine interference was manifested on my behalf, for an apparent accident saved me from that boat. Almost crippled as I was, I managed, by the aid of the rope to which I clung, to regain the now blazing deck, just as some of the crew were endeavouring to release one of the life-boats from her very embarrassing fastenings. They succeeded. She was turned over the ship's side. I was in her then; and, while suspended midway between fire and water, she turned keel up, and her oars were thrown out.

* "The *Amazon*:" A sermon preached at St. Andrew's Church, Plymouth, January 18th, 1852, by the Rev. William Blood (one of the survivors).

She righted in a few minutes after, and when she did so I was still in her—by what means I know not, but that the All-seeing eye was still upon me. In a minute or two more she was lowered into the sea with her freight of thirteen human souls, and amidst cries of 'She is leaking!' 'She is stove in!' 'She will be swamped!' but at the same moment one of the crew in her cut the rope that bound her to the blazing ship, and she at once dropped astern. We now made the terrible discovery that she was really leaking, and with the apparent certainty of having escaped one horrible death only to perish by another, we set our wits to work to staunch the leak and bale out the water. Michael Fox, one of the sailors—a man who merits much honour for his coolness and bravery throughout—actually thrust his arm through the leak to arrest the ingress of the water; while I handed him my cap, another gavo his stockings; others did likewise; and then, with such means as these, and with the aid of our boots and two little empty casks, we managed to prevent the life-boat from being swamped. While thus occupied, and being tossed about, without food, water, oars, helm, or compass, totally at the mercy of the contending elements, we had dropped about two miles astern of the doomed ship. She was apparently motionless, while the sea continually broke over us. A barque passed between the blazing pile and our ill-omened craft. Her hull, sails, and rigging were reflected against that fearful blaze with a blackness of shadow that appeared to render still deeper the depth of our calamity, and which the morning's light helped not to lessen, for the barque had disappeared. After the barque had departed, we fancied we saw a boat, somewhat like our own, close to us, and we hailed her, with all the power of our united voices, for oars; but she either heeded or heard us not, and quickly disappeared, and the impression was that she had been swamped. Our frail tenement was still knocked about as I have stated, still within sight of the burning ship; and at about five o'clock on Sunday morning, when the powder on board caught light, she blew up, presenting to our terror-stricken gaze a most awful and sublime spectacle. Vast beams of flaming timber were hurled about in the air, and seemed suspended there for a moment, and then disappeared with a hissing noise in the roaring waters. A moment after, and all that remained unconsumable by fire of that once noble specimen of our mercantile marine vanished like a shot beneath the waves. And then came upon us that intensity of darkness that lent an additional horror to our truly forlorn condition. However, the merciful Ruler of our destinies had not deserted us; for as the Sabbath morning's light dawned the wind abated and the sea became comparatively calm, except that there was still a heavy swell; but still, there we were, thirteen human beings, in a frail, leaky boat, without an atom of food of any sort, the vast ocean around us, and in a state of perfect ignorance as to our geographical position, while our other physical wants, such as of clothes, boots, &c., made our case truly deplorable. By about twelve o'clock at noon, on Sunday, we had drifted, as nearly as possible, to the spot where the *Amazon* had sunk; and upon the then comparatively calm sea were strewn about but too many evidences of the last night's fearful devastation—immense spars, charred timbers, barrels, bales, and boxes innumerable. We drew up one of the latter, got it on board, forced it open, and found that it contained only a quantity of shoes. To those each helped himself to a pair, and then threw the remainder overboard.

"As the Sabbath morning advanced towards noon-day the glorious sun burst forth, and appeared as a happy harbinger of the fortunate release in store for us. The weather was fine,

though there was a heavy swell in the sea, and we were all up to our middle in water. William Angus, poor fellow, was of no use in the boat. When leaving the ship, he had thrown himself overboard, fell upon my back, and cut his head severely. He appeared in a state of despondency for the loss of his brother; and another poor fellow had part of the fingers of one of his hands chopped off. At two o'clock the sun shone forth in all his splendour. By this time we had taken up some of the bottom boards of the boat, and these we had converted into paddles, rudder, and mast. Lieut. Grylls took from off his head his shirt, which he had previously wrapped around it, and made a flag of it; and in lieu thereof I tore off the skirts of my coat, one of which I tied around his head, and with the other I made a cap for myself. The remainder of that coat I still have, and will preserve as a memento; and so I ought, for it served as a protection against the pouring rain, while our bodies lay partially submerged in the water and the waves at times dashed over us. This coat became most useful to me afterwards, during the eleven days on board the galliot, for it served as a pocket-handkerchief, napkin, &c.

"There was a peculiar death-like feeling produced by being obliged to sit in the water all night, while at the same time the whole body was saturated with the rain and the billows poured their waters over us. At one time, shivering with cold and wet, I strove to keep my back pressed against another person to preserve the vital heat. Such cold I never felt before. The casks which we found in the boat were of essential use. How wonderful that they should have remained in the boat when she capsized and threw out the oars, for without them she must have swamped.

"Dismal were the thoughts suggested on that day as to the future. Will a storm arise? If so, our little vessel cannot live; she must be overwhelmed by the raging billows! How long can we remain in the midst of the wide extended ocean? Shall we starve—perish with hunger? Such were the gloomy forebodings, when the thrilling, joyful exclamation of 'A sail!' burst from the lips of one of the crew. Then followed the exclamation of, 'Oh, I hope she sees us! Does she hear us? Is she coming this way?' She was then on the very verge of the horizon, and—disappeared! Mute despair was then plainly perceptible in every face. I had made up my mind to die of starvation, but thought I could exist without food for a long time, for having once been ill in Paris for three weeks without even having tasted food of any sort during the whole of the time, I felt now prepared to go through the same ordeal. But again the joyful sound was uttered by Lieut. Grylls, 'I see another sail!' We then commenced tearing up the boards from the bottom of the boat, and converting one of them into a mast, upon which we attached a shirt as a signal of distress, and breaking the rest of them into paddles and a helm, we determined, as our lives depended upon it, to make a desperate effort to approach the welcome visitor. Hour after hour was passing away—our progress through the waves was slow, and the sailors were beginning to relax their efforts at the paddles in utter hopelessness. The sun was fast fading away, and the horrors of another night at sea in an open boat stared us in the face. I begged, prayed, and entreated the men to continue their exertions, that with the light of day we still had hope; an hour—perhaps a few minutes—may bring us near enough to be seen. Alas! there were four out of the thirteen quite helpless—viz., poor Angus, the man who had lost his fingers, a boy, and a Spanish gentleman, who appeared to have become quite

paralysed. The sun was just about to shed his last ray of light upon our eyes and hope in our hearts, when those on board the vessel saw us, heard us, bore down upon us, and took us on board. Had not the great God sent us this timely succour, no account of our fate could have ever been made known, for any one of the storms which prevailed during the following eight or nine days must have destroyed us. We were hauled on board by means of ropes, and stowed in a little cabin, 6 feet by 4½ only; but yet, what a palace compared to the horrors from which we had just been rescued! This vessel was a small Dutch galliot, and had a cargo of sugar from Amsterdam, consigned to Leghorn; and was, therefore, desirous of landing at Gibraltar, it being on her course. However, adverse winds set in; the captain of the galliot knew not his position; he was unable to take an observation; and was, in consequence, knocked about for nine days with this serious addition to his crew. I had been visiting the house of a noble friend but a few weeks before, but what was it compared to our present little home?" They were at length safely landed at Plymouth.

Among so many gloomy incidents, one of another nature may well be recorded. The name of Lieutenant Grylls has been mentioned as one of the survivors. But the *Cornwall Gazette* of January 8th had the following announcement:—"Lost, on board the *Amazon*, mail steam-packet, on Sunday, the 4th inst., in which vessel he had taken his passage to join H.M.S. *Devastation*, to which ship he had been appointed as first lieutenant, Lieutenant Charles Gerveys Grylls, R.N., aged twenty-five, eldest surviving son of the Rev. Henry Grylls, vicar of St. Neots." But early in the morning of Friday a special messenger arrived at St. Neots, bearing a letter to the good vicar from his son, stating that he was alive and safe, and that he hoped to be with him in the evening. The news soon spread; all the neighbouring hamlets turned out their inhabitants, the village bells were rung, and a party of about 150 persons set off on the road to Plymouth to draw him home by hand. This the gallant lieutenant would not allow, being too anxious to return to his friends. A triumphal procession was, however, formed, escorted by which this witness from the dead was restored to his bereaved father. One can imagine the joy in the household, and the strong revulsion of feeling there!

"On taking a review of this overwhelming catastrophe," says the Rev. C. A. Johns, "the reader will rise from a perusal of the narrative having his mind painfully impressed with the fearful loss of human life; and as he endeavours to picture to himself the incidents as they severally occurred, he will be more inclined to doubt that any one was possessed of nerve sufficiently strong to stand the first half-hour's ordeal rather than to wonder that so few escaped. A vessel, constructed of the best material employed in ship-building—oak, teak, and Dantzic pine—but, nevertheless, a structure of wood, bearing, in addition to cargo, crew, and passengers, 1,000 tons of inflammable coal, and a framework of massive iron, unceasingly grinding with the force of 800 horses—sixteen furnaces and as many huge boilers, all employed in generating the most powerful instrument of usefulness or destruction (as the case may be) which man has reduced to his will—a store-room in the vicinity of the boilers, plentifully stocked with oil and tallow—well might the lip quiver and the cheek blanch at the bare idea of FIRE being allowed to creep with but a flickering light beyond its prescribed limits. But, besides all this, he will remember that to this concatenation of perils—themselves too terrible to dwell on—must be added contingencies which aggravated

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the danger in a tenfold degree. The ship was new, her timbers were dry and resinous—not, as is the case with sea-worn vessels, saturated with salt, and therefore less inflammable, but converted into rapid fuel by the unusual heat, which from some cause, explained or unexplained, was perceptible at a great distance from her boilers; the crew, though young and efficient, and more than one-half of them practised servants of the Company, were yet strange to the ship, not even having had their various duties assigned to them, nor familiar with the persons of their officers, as became evident afterwards from the discrepancies in their statements of names; the wind was blowing a gale in the direction



THE "LONDON."

which would most readily extend a conflagration from the probable source of fire to the stern, where the majority of passengers were congregated; the time was midnight; many of the officers, weary with their previous exertions, were recruiting their strength by a brief repose; most of the seamen and all the passengers were buried in sleep; the sea was in a state of commotion; the place was the Bay of Biscay, the dread of outward-bound mariners; the boats, though unexceptionable as to number, capacity, and quality, were not stowed in the usual simple way, but rested on brackets, from which it was necessary for them to be lifted before they could be lowered even into that foaming ocean. Suddenly the cry of FIRE! is shrieked out; the bell is set a-ringing—the death-knell—the knell of sudden, inevitable, agonising death to many a stout heart on board that proud but perishing ship. He must sleep soundly who failed to hear that piercing cry and the heartrending shrieks which took it up. Some thought it of no consequence: 'We will dress, and hasten on deck, that we may help to extinguish it.' But there were some who knew better; they could

look a hurricane in the face, they could encounter a hailstorm of bullets in the execution of their duty, but they knew that, with that enemy on board, the iron beams of the *Amazon* could only be cooled by the water which rolled at the bottom of the ocean. Those brave men did all they could—they gave their charge a brief space to make their peace with God, if God were in their thoughts, and resigned themselves to His keeping who alone could help them. Before the least terrified could gain the deck the flames were soaring above the funnels. A flight of fire was sweeping the deck; it extended from one side of the vessel to the other; it separated those in the fore-part from those in the stern; it shot forth from the port-holes; it singed the hair and scorched the skin of those who were furthest from its reach; and the air of heaven was one huge blast-pipe, fanning it into fury! Are the fire-engines of no avail? They are themselves burning. Then stop the paddle-wheels, that the boats may be launched. Alas! the engineers, half suffocated, have long been driven from the engine-room, and the levers are beyond their reach. But the ship yet answered her helm, and was put before the wind. And now the flames were borne in an opposite direction, towards the bow, and the gale seemed to be diminished. Now the captain cried, 'Lower the larboard lifeboat!' 'It is on fire!' 'Lower the starboard lifeboat!' 'It is on fire!' Other boats yet remain, and crew and passengers crowd into them. Fatal haste! It was a work of time and difficulty to lift them from their sockets before, with this addition to their weight it is next to impossible. One after another they are tumbled, rather than lowered, into a sea which, from the rapid motion of the vessel, appears to be rushing from them. Some hang suspended, and their cargoes are swept away by the boiling surge; one is swamped, another is stove in. Still the fire is drawing nearer; it surrounds the boilers, and the water contained in them is nearly exhausted. When that has happened they will burst, perhaps, and then the engines will cease to work. Strange that success in effecting an escape should be promoted by the bursting of a boiler—an accident which, had it come alone, would have occasioned terror and dismay. No one knows, amidst the overwhelming din of air, fire, water, steam, human shrieks, and even the cries of dumb animals, whether this event happened or not. It was not dreaded—it was hoped for. It could not have added to the dismay, so, if it happened? it was unnoticed.

"However that may be, the ship could not free herself from her destroyer, but moderated her speed. A few boats were put off—no living soul can say how many—all, probably, that were left, and then, perhaps, the officers embarked on a raft, and—we dare not carry our thoughts further in that direction.

"The vessel lay a burning log on the waters for four or five hours, and then, as if an evil demon had possessed her, or as if some gorgeous *fête* had now reached its close, threw up a discharge of brilliant fireworks—and the billows of the Atlantic swept unconcernedly over her hissing embers."

The following example—the terrible loss of the *London*—presents a striking contrast to that of the *Amazon*. She was literally swamped at sea, and there are no recorded parallels to the case on such a scale. Vessels, indeed, are often lost by great leakage produced by collision, but the cases are rare in modern days and in well-found ships, where ordinary leakage and water "shipped" on deck makes any great difference, and in steam-ships the pumps worked by the "donkey" engine, as a rule, effectually prevent any danger from these sources.

The *London* was a first-class passenger steamship of her day. She was nearly new, of 1,700 tons, and valued at £80,000. She belonged to a distinguished firm, and had been constructed on the most approved principles. Her commander, Captain Martin, was an officer of ripe experience, and this was her third voyage. She had acquired a first-class reputation; and for months before the time* of sailing, berths were so eagerly engaged that it would have been difficult to accommodate, in the roughest manner, many more, while in the saloon there were no vacancies. One lady who was desirous of proceeding with her family from Plymouth to Melbourne had made repeated applications to the owners' agents, and the captain had been consulted, but, fortunately for the applicant, had declared that the cabins were so full that he could not possibly accommodate her—a result that, at the time, caused her much disappointment; afterwards she had reason to thank her good fortune. A second-class male passenger was so alarmed at the rough weather which the *London* encountered on her way from the Thames to Plymouth, that on arrival at the latter he went ashore, resigned his passage, and returned to his home, thus unwittingly saving his life. A young man, as the result of some family quarrel, had left his home, and taken a passage by the *London*. He was advertised for in the *Times*, and importuned to return, his friends being at first unaware of his whereabouts. Messengers were sent down to Plymouth, his friends having later acquired some clue to his movements, and an influential ship-broker in the town was employed to intercept his flight should he attempt to sail thence. Fortunately, he was detected among the passengers of the *London*, and the fact communicated to his family by the broker, the result of which was that a brother of the young man went down to Plymouth, and persuaded the would-be emigrant to forego his voyage.

The *London* left the East India Docks on December 29th, and on account of the severity of the weather remained at anchor at the Nore during part of the 30th and the whole of the 31st. This fact alone would indicate that Captain John Martin, her commander, was a careful seaman. The weather remained boisterous, and after getting out into the Channel the pilot decided to take the vessel for shelter to Spithead. When the weather had abated she proceeded to Plymouth, arriving there on the 5th of January. Here an incident occurred, ominous in its nature, and particularly distressing at the commencement of a voyage, more especially as many passengers at such a time are nervous and fearful. The small boat from a Plymouth pilot cutter, which had on board the pilot and his assistant, was swamped. The latter was rescued by a boat from the *London*, but the pilot was drowned. The remainder of the day was occupied in shipping an additional number of passengers and filling up with coal. She sailed the same evening. The weather is described as having been then moderate.

On the 6th and 7th of January the wind rose, accompanied by strong squalls and a high sea, which caused the ship to roll considerably. Still the weather was not so boisterous but that Divine service was held on the 7th, it being the Sabbath. On Monday, the 8th, the

* This is common enough in all the great steamship lines, where certain vessels acquire a name for speed and accommodation, and where the captain is known as a first-class commander. Passengers who can afford to wait often delay their trips for weeks for the opportunity of sailing on a favourite ship.

wind freshened to a gale from the south-west, and at 9 a.m. the captain ordered the engines to be stopped, and to make sail. At 5 p.m. the weather improved, and all sails were taken in, and steaming resumed. Early on Tuesday the wind increased to a hard gale, with a very heavy sea, the ship going under steam only, and at the reduced rate of two knots an hour. At this time she pitched with terrible violence, taking whole seas over her bows. At 7 a.m. an unusually heavy sea broke into the life-boat stowed on the port-quarter, filled her completely, and carried her overboard with all her gear. At 9 a.m. the ship gave a



THE "LONDON" GOING DOWN.

tremendous pitch, so as to bury herself forward, when the sea carried away the jib and flying jibbooms, and they took with them the fore-top mast and fore-top gallant, the fore-royal and main-royal masts, with all their spars, sails, and rigging. The masts fell in-board, and hung suspended by the rigging, but the jibbooms remained under the bows, fastened to the ship by their stays, which were of wire. Every effort to get them clear failed till next morning, it having blown a furious gale all night from the south-west, with a sea that kept constantly washing all forward. On the morning of Wednesday, the 10th, the gale continued without the least abatement, and at 3 a.m. the captain gave orders to Mr. Greenhill, the engineer in charge, to get up full steam, as he intended to put back to Plymouth, in order to refit. The ship's course was accordingly shaped for home, the fore

and mizen stay-sails were set, and she steamed along moderately at the rate of five or six knots. In the course of the morning, the masts, which up to that time had been swinging about aloft, were secured, and the wreck of the jibboom cleared away. Observations taken that day indicated that she was about 200 miles from the Land's End. At 6 p.m. both the fore and mizen stay-sails were carried away in a furious squall; another life-boat and the cutter were washed clean overboard and lost. At 9 p.m. the wind increased to a perfect hurricane from the north-west, the squalls blowing with a degree of fury seldom paralleled. The engines were stopped, and the ship put under the main top-sail only, which was soon blown away in shreds. The captain once more ordered the engines to be set in motion. Up to this time, notwithstanding the heavy seas she encountered, it does not appear that the vessel had shipped much water.

At half-past 10 p.m. a terrific sea broke upon the ship over the weather or port gangway, and an immense mass of water, the crest of a mighty wave, descended almost perpendicularly over the hatch of the engine-room, smashing it right in, admitting tons upon tons of water, washing from the deck into the engine-room two men, a seaman and a passenger. There being nothing to obstruct the influx of sea, the engine-room began to fill with water. The fires were extinguished at once, and in about eight minutes the engines ceased to work. The engineers remained below till the water was above their waists, and they could work no more. The large bilge-pumps also proved useless, and the condition of the ship became utterly helpless, often rolling into the trough of the sea, rolling gunwale under, and labouring heavily. The captain called on those who were baling, "Men, put down your buckets, and come and try to secure the engine-room hatch, for that's our only chance of saving the ship! Secure that, and we may keep her afloat yet." Every endeavour, however, to replace the hatch proved unavailing. Efforts were made to stop the opening with sails, mattresses, and spars, but without success; and although the donkey-engine and pumps were kept at work, yet the water quickly gained upon them, and all their efforts were fruitless. It was then that the captain uttered words of which he knew the full meaning, and which must have thrilled through many of the passengers' bosoms who had hitherto been hoping against hope—"Boys, you may say your prayers!" All was over with them.

At 4 a.m. of the 11th a tremendous sea struck the ship abaft, which stove in four windows, or stern-ports, of the upper or poop cabin. Through the breaches thus made the sea rushed into the ship in such quantities that the 'tween decks were soon half full of water. The ship at this time was settling fast; the captain went into the engine-room, and, with the engineer, took soundings, when it was found that there was fourteen feet of water in her. The captain then told Greenhill that he had abandoned all hope of saving her, and shortly afterwards made a similar communication to the passengers. At about 10 a.m. the captain ordered the boats to be got ready, which was done, and the starboard pinnace, which was of iron, was lowered into the water, but was almost immediately upset by the sea, and lost. Shortly after this the captain entered the saloon, and said, "Ladies, there is no hope for us, I'm afraid. Nothing short of a miracle can save us!"

During the hours of agony and horror which had preceded this announcement the

Rev. Mr. Draper,* a Wesleyan minister on board, was incessant in administering religious comfort to his fellow-sufferers; and we are told by the survivors that the women (all of whom perished in the sequel) sat about him reading their Bibles, with their children grouped around; "and occasionally some man or woman would step up to him and say, 'Pray with me, Mr. Draper'—a request that was always complied with." What a scene must have been presented at that last prayer-meeting in the cabin, the ship labouring and tossing the while; the waves, with their ominous roar, breaking over her and dashing against her; while by half-extinguished lights little groups of earnest, pale-faced people huddled together, shivering and trembling, before the doomed *London* took her last leap into the dark waters!

After the announcement by the captain that they must prepare for the worst, Mr. Draper is stated to have stood erect, and with a clear, firm voice, the tears streaming from his eyes, said, "The captain tells us there is no hope—that we must all perish; but I tell you there is hope for *all*!" The reader will know what the good old man meant. Mrs. Draper is said at the last moment to have handed her rug to one of the seamen who was attempting to get off in a boat, and when asked what she would do without it, she replied, "It will only be for a few moments longer."

As there were so few survivors to tell the tale, the incidents which must have occurred during this terrible time are necessarily somewhat meagre. One passenger rushed on deck labouring with a heavy carpet-bag, which he expected to save with his life. The captain could hardly forbear, even at that terrible time, a melancholy smile at the absurdity of a man at such a moment taking any thought about his property. When the only boat which got off safely was about to leave the fated ship, a lady entreated to be taken on board, offering a thousand guineas as a reward. But it was impossible—millions could not have saved her. A passenger who was saved, just before leaving in the boat, went into the cabin to persuade a friend to join him. "No," said the other; "I promised my wife and children to stay by them, and I will!" His friend helped him to remove the children to a drier part of the cabin, and then, with a sad good-bye, ran up to the deck. When last seen, the man was still standing with his wife and little ones. Another passenger said to a friend, also one of the few saved, "Jack, I think we are going to go." "I think we are," was the answer. "We can't help it," rejoined the first; "but there's one thing I regret:" and he went on to explain how some £500 of his money was in the Bank of Victoria, and he evidently feared some hitch in its recovery. "I should have liked my poor father to have it." He was a true son to the last.

As at the wreck of the *Amazon* a distinguished author lost his life, so on the *London* a great actor, the celebrated G. V. Brooke, perished, but perished nobly. The *Times* (quoting the *Western Morning News* of the date) says:—

"Down into the waves, with 269† others, has sunk Gustavus V. Brooke, the famed

* The Rev. D. J. Draper, a man of fifty-six years of age, was returning to Australia, where for thirty years he had laboured as a missionary, and where he was very generally and deservedly respected. Part of the information respecting the wreck is taken from "The Storm and the Haven," a tribute to his memory, published in Melbourne the year of the terrible occurrence.

† The official inquiry of the Board of Trade elicited the fact that the number was somewhat smaller. The total number of souls on board was 263, and of these 19 were saved, leaving the number who perished at 244.

tragedian, who was bound for the country which had been the scene of a reverse of fortune for him, but previously of many successes. He was a tall man, of powerful build, and he is stated by the rescued passengers to have exerted himself to the utmost in trying to keep the ship afloat. The Dutch portion of the crew, twenty-one in number, refused to work, and, according to the English sailors who were saved, these men went to their berths and remained there, so that the passengers had to work at the pumps for many hours with the English seamen. Mr. G. V. Brooke exerted himself incessantly; attired only in a red Crimean shirt and trousers, with no hat on, and barefooted, he went backwards and forwards to the pumps, until working at them was found to be useless, and when last seen, about four hours before the steamer went down, he was leaning with grave composure upon one of the half-doors of the companion; his chin was resting upon both hands, and his hands were on the top of the door, which he gently swayed to and fro, while he calmly watched the scene. One of the passengers who saw him said, 'he had worked wonderfully—in fact, more than any man on board the ship.' To the steward, to whom Mr. Brooke made himself known, he said, 'If you succeed in saving yourself, give my farewell to the people of Melbourne.'"

The last trace of the gifted tragedian is found in the following episode. In the *Times* of March 20, 1866, appeared the following letter from Mrs. Brooke (Avonia):—

"To the Editor of the *Times*.

"Sir,—On Friday night I received the last written words of my dear husband. They were found in a bottle on the Brighton beach, and forwarded to me by Mr. C. A. Elliott, of Trinity College, Cambridge. They are written in pencil on a torn envelope, and read as follows:—'11th January, on board the *London*. We are just going down. No chance of safety. Please give this to Avonia Jones, Surrey Theatre.—Gustavus Vaughan Brooke.'

"Will you be kind enough to insert this fact in your valuable journal, for, sad as the message is, he has many friends who will be glad once more to hear from him, even though his words have come from his very grave.

"With respect, &c.,

"AVONIA BROOKE."

"36, Albemarle Street, Piccadilly."

At 2 p.m. there could not be a doubt—the vessel was sinking rapidly. The captain then directed Greenhill that, as the port cutter was ready for lowering, he had some chance of saving himself, and that he had better get into her. The captain shook hands with him, and said, "There's not much chance for the boat; there's none for the ship. Your duty is done, mine is to remain here." The boat was lowered, and four men, followed by others of the crew, got into her. When asked to come into the boat, the captain answered in the true spirit of a sailor-hero, "No, I will go down with the passengers, but I wish you God speed, and safe to land!" Noble John Bohun Martin!* But not, thank

* It is a fact that Captain Martin had an interest in the *London* to the extent of £5,000. Hard to lose life and property so valuable—may be, so important to others at home—at one and the same time!

God! the only one on record; he was but one of the noble army of sailor martyrs of whom Mrs. Hemans sung so touchingly :—

“Yet more! the billows and the depth have more!
 High hearts and brave are gathered to thy breast!
 They hear not now the booming waters roar;
 The battle thunders will not break their rest.
 Keep thy red gold and gems, thou stormy grave!
 Give back the true and brave!”



GETTING OUT THE "LONDON'S" BOAT.

“Give back the lost and lovely! those for whom
 The place was kept at board and hearth so long,
 The prayer went up through midnight's breathless gloom,
 And the vain yearning woke 'midst festive song!
 Hold fast thy buried isles, thy towers or throne—
 But all is not thine own.

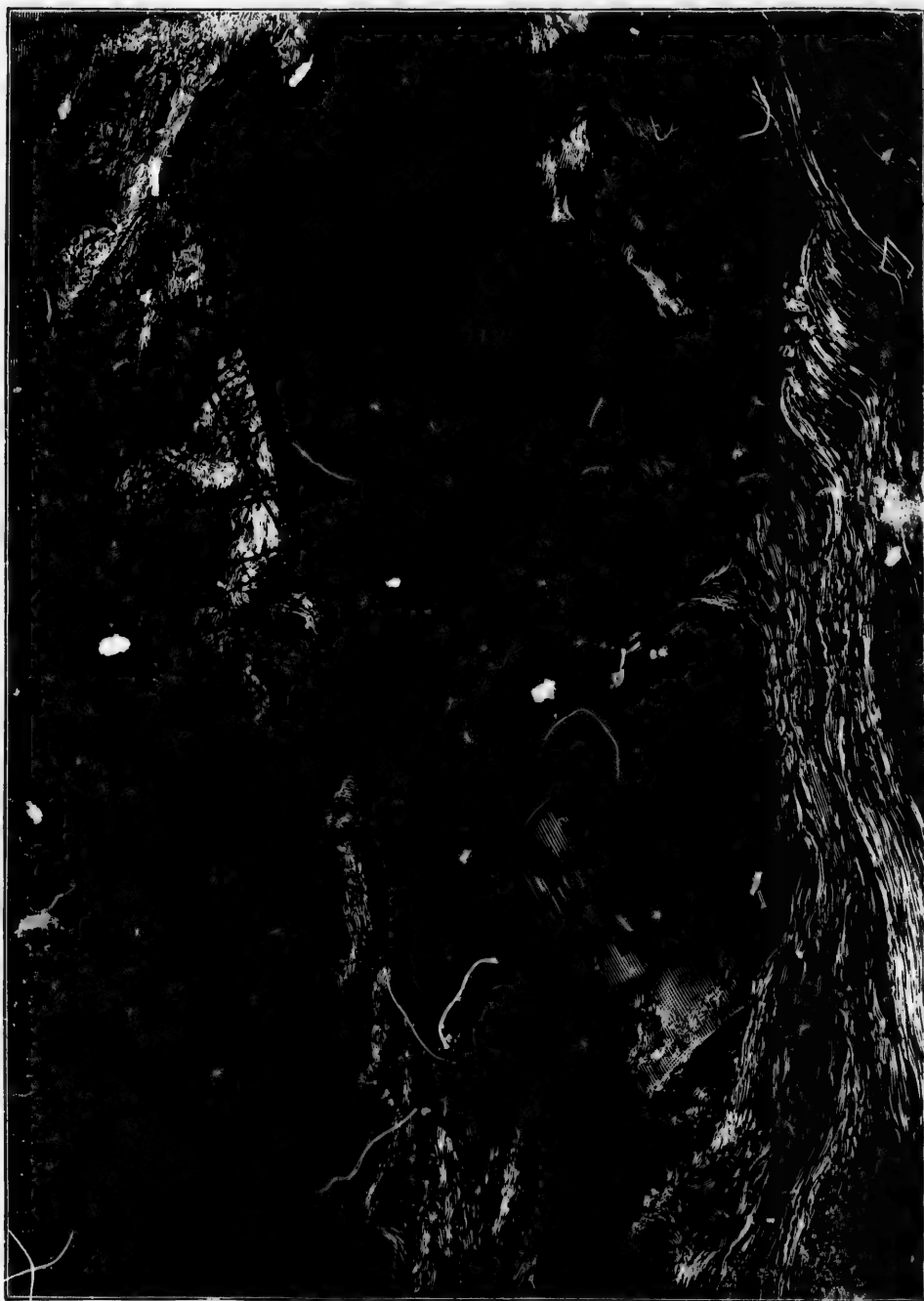
“To thee the love of woman hath gone down;
 Dark flow the tides o'er manhood's noble head,
 Or youth's bright locks, and beauty's flowery crown:
 Yet must thou hear a voice—Restore the dead!
 Earth shall reclaim her precious things from thee!
 Restore the dead, thou sea!”

The boat, into which the captain had thrown a compass, and to the occupants of which

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WRECK OF THE "ROTHSAY" CAE 11.

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he had shouted their course, "NNE. to Brest!" left the sinking *London* none too soon. The number in the boat consisted of nineteen souls, all that were saved by any means, and comprised the first, second, and third engineers, one midshipman, twelve of the crew, and three passengers (all second class; no first class or steerage passengers whatever were saved). Shortly afterwards those who went in the boat pushed off from the ship, seeing that she must immediately sink, and apprehending that the boat might be sucked in as she went down. They had hardly got eighty yards off, when the stern of the *London* plunged beneath the waves, with crew and passengers and all. Her bows stood upright for a moment or two preceding the fatal plunge, exposing the keel as far as the foremast. The wind was howling so fiercely that not a sound could be heard of the shrieks and groans of over two hundred persons who were going, in sight of the pitiful remnant in the boat, to their last doom. They saw a whole group of passengers suddenly swept off the deck, and they saw that the remaining boat, full of people, was drawn down into the vortex made by the sinking ship. The third officer, Mr. Arthur Angel, aged 20, with noble devotion to his duty, was observed still at his post by the pumps as she went down. The next minute there was but a watery waste over the grave of that devoted band, so full of hope and life but a day before.

With but a few biscuits on board, and drenched to the skin by every wave, the nineteen survivors in their open boat drifted about for twenty hours. They fancied that they saw a ship through the gloom, and raised their voices in one united shout. They were heard, and their hail returned; but they were not seen, and had no light to show. The ship tacked again and again in the hopes of finding them, and when their suspense was at its highest, sailed away, and they saw her dim form disappearing in the darkness. When day dawned another ship was sighted far in the distance. A shirt was hoisted for a signal, and the oars were zealously plied. After five hours they were rescued by this vessel, the Italian barque *Marianople*, on board which they received a hearty welcome from the captain and his men. They were eventually landed safely at Falmouth.

CHAPTER XXII.

EARLY STEAMSHIP WRECKS AND THEIR LESSONS.

The *Rothsay Castle*—An Old Vessel, unfit for Sea Service—A Gay Starting—Drifting to the Fatal Sands—The Steamer Strikes—A Scene of Panic—Lost Within easy reach of Assistance—An Imprudent Pilot—Statements of Survivors—A Father and Son parted and re-united—Heartrending Episodes—The Other Side: Saved by an Umbrella—Loss of the *Killarney*—Severe Weather—The Engine-fires Swamped—At the Mercy of the Waves—On the Rocks—The Crisis—Half the Passengers and Crew on an Isolated Rock—Spolasco and his Child—Holding on for Dear Life—Hundreds Ashore "Wrecking"—No Attempts to Save the Survivors—Several Washed Off—Deaths from Exhaustion—"To the Rescue!"—Noble Efforts—Failure of Several Plans—A Novel Expedient adopted—Its Perils—Another Dreary Night—Good Samaritans—A Noble Lady—Saved at Last—The Inventor's Description of the Rope Bridge—The Wreck Register for One Year—Grand Work of the Lifeboat Institution.

THE *Rothsay Castle* was a steamship built in 1812, and was little enough adapted for marine navigation. She was one of the first vessels of the kind on the Clyde, and was perhaps constructed for the ordinary wear and tear to which a river vessel is exposed,

but certainly, at her age, should never have been allowed to leave Liverpool for Beaumaris in weather so bad that an American vessel which had been towed out that day had been compelled to return to port. She had been, it was said, at one time, condemned to be broken up, but other counsels had prevailed, and she had been patched up and repaired for continued service.

At ten o'clock on Wednesday morning, the 17th August, 1831, the vessel was appointed to sail from the usual place, George's Pier-head, Liverpool; but there was a casual delay at starting, and she did not leave till an hour later. She was freighted heavily, and it was computed that hardly less than 150 persons (if the children carried free were counted) were on board. A majority were holiday seekers; the vessel was tricked out with colours, and as the vessel left a band struck up its gayest music. Among the pleasure parties on board was one from Bury, in Lancashire, consisting of twenty-six persons. They set out in the morning, joyous with health and pleasant anticipations, and before the next sun arose all of them, except two, had been swallowed up in the remorseless deep! *

The vessel proceeded very slowly on its course, making so little way that at three o'clock in the afternoon she had not reached a floating light stationed about fifteen miles from Liverpool. Arrived off the light, the sea was so rough that many of the passengers were greatly alarmed, and one, who had his wife, five children, and servant on board, went down to the captain and begged him to put back. The captain answered, with an oath, that he thought there was "a deal of fear on board, and very little danger." The whole family was among the lost. The vessel drifted out of her course, and proceeded so slowly that the alarm on board became general.

One of the survivors stated that the leakage was so great that the fireman found it impossible to keep the fires up, two being actually extinguished, while the coals were so wet that it was with difficulty the others were kept in. Yet there were no attempts made to sound the bell or ascertain what water was in the vessel. It was near twelve o'clock when they arrived at the mouth of the Menai Strait, about five miles from Beaumaris, and here her steam suddenly got so low that she drifted with the tide and wind towards the Dutchman's Bank, on the spit of which she struck. Now came a time of awe and consternation. The crowded boat rolled in a frightful manner, and the worst fears of the passengers seemed to be on the point of realisation. The seas broke over her on either side. The engine had previously stopped for about ten minutes, the coals being covered in water, and the pumps were choked. On her striking, the captain said, "It is only sand, and she will soon float." Only sand! More vessels have been lost on sands than ever were on rocks. In the meantime he and some of the passengers got the jib up. No doubt he did this intending to wear her round, and bring her head to the southward, but it did not, it proved, make the least difference which way her head was turned, as she was on a lee shore, and there was no steam to work her off. The captain also ordered the passengers first to run aft, in the hope, by removing the pressure from the vessel's bow, to make her float.†

* The above account is principally derived from a "Narrative of the Loss of the *Rothsay Castle*," by Lieut. R. J. Morrison, R.N., and other sources.

† The writer has seen nearly the same thing practised on the flat-bottomed stern-wheel steamers common in some parts of America, where, in shallow water, the passengers have been required to walk to the other side of the

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This failing to produce the desired effect, he then ordered them to run forward. But all these exertions were unavailing; the ill-fated vessel stuck still faster in the sands, and all gave themselves up for lost. The terror of the passengers became excessive. Several of them urged the captain to make some signal of distress, which he is said to have refused to do, telling the passengers that there was no danger, and that the packet was afloat, and *on her way*, knowing well that she was irretrievably stuck in the treacherous sands, and that she was rapidly filling from her leaks. The unfortunate man was fully aware of the imminent danger they were in, and we may charitably suppose that he made such statements to prevent a panic. The great bell was now rung, with so much violence that the tongue broke, and some of the passengers continued to strike it for some time with a stone. The bell was heard at Beaumaris, for the night was clear, with strong wind; but it was not known from whence the sound came, and no trouble appears to have been taken. The tide began to set in with great strength, and a heavy sea beat over the bank on which the steam-packet was firmly and immovably fixed. It was the duty of the captain now to make every possible exertion, by signals, to procure assistance from shore. It is said that if a light had been shown on board the unlucky steamer, the boats from upwards of twenty vessels lying at Bangor would undoubtedly have saved the larger part of the unfortunate passengers. The masts should have been cut away, not merely to ease the vessel, but to afford some chance to the poor people. At Penmaen Point an establishment of pilots had been fixed by Lord Bulkeley, for the express purpose of rendering assistance in such cases. "The world," says Lieut. Morrison, "will hardly credit the astonishing fact that their establishment is within little more than a mile and a half from the scene of wretchedness, and that, the wind being fair, the boats from thence could have reached the spot in about ten minutes. A single blue light burned, a single rocket fired, or even a solitary musket discharged, would have ensured this happy result." The evidence showed that there was nothing of the kind. Probably no sea-going steamer, carrying 150 passengers, was ever left so utterly unprovided with proper appliances.

The scene that now presented itself baffles description. A horrible death seemed to be the doom of all on board, and the females in particular uttered the most piercing shrieks. Some locked themselves in each other's arms, while others, losing all self-command, tore off their bonnets, caps, and other portions of clothing, in wild despair. The women and children gathered in a knot together, and kept embracing each other, uttering all the while the most dismal lamentations. "When tired with crying," says Morrison, "they lay against each other, with their heads reclined, like inanimate bodies. It was a few minutes before that a Liverpool Branch pilot on board, William Jones, became aware in all its extent of their dreadful situation. He is reported to have exclaimed, 'We are all lost!' which threw down whatever hopes any on board had till now entertained, and induced them to give themselves up to bitter despair. This was sadly imprudent, and little like the conduct I should have expected from such a man. He ought to have set an example of preparing something in the nature of a raft, to save what lives could be saved; and as

vessel, and literally "tip" her on that side. On one occasion in a "slough," or shallow passage, he saw a number of the passengers and crew literally step out into the water and push the boat along, till, with their exertions and the steam-power, she was got off the bank.

he must have known that it was low water, and the whole of the Dutchman's Bank was dry within a few yards of them, and the tide just setting on to it, there can be no reason to doubt that he might have been by this means instrumental in saving many of the unhappy victims as well as himself."

One of the survivors stated that after the vessel had struck several times his wife and some friends came to him, and asked if he thought they must be lost. "I thought," said he, "we should, and they proposed going to prayer for the short time we had to



THE MENAI STRAITS.

live. We all went to prayer, myself and wife in particular, and when we got from our knees I saw four men getting upon the mast, and beginning to fasten themselves to it. I told my wife I would look out for a better situation for us. I took her towards the windlass, and began to fasten a rope to the frame where the bell hung; and when I had got the rope made fast, and looked back for my wife, she had again joined our friends near to the place at which we kneeled down. A great wave almost took me overboard, but I held by the rope; then came a second and a third wave before I could see my wife again; and when I looked—they were all gone.*

"I then prepared to die myself in the place I was at, and remained in that situation

* *Vide* "Letters, &c., on the Loss of the *Rothsay Castle*." By the Rev. J. H. Stewart.

till daylight, at which time about fifty people remained on board. As the waves came the people kept decreasing, until all were gone except myself. I remained on the wreck until I saw a boat coming, which took me on board, and also rescued those on the mast, and afterwards others. We were then taken to Beaumaris, and treated with the greatest hospitality and kindness."

Another survivor, after detailing the facts preliminary to the disaster, said: "The waves broke heavily on the vessel; the chimney became loose, and first reeled to leeward, then to windward, and tumbled over with a great crash. The mainmast then went overboard, and remained hanging to the vessel by the rigging. The captain still assured us we should be saved, and that assistance would shortly arrive. I requested him to fire a gun; he said he had none on board. A small bell was then rung, but its noise would probably be lost in the roar of the wind and waves. Some of the passengers asked the captain to hoist a light; he said he had none; but we knew he had a lantern, for one of the crew took it round when he collected the checks, about half an hour before the vessel struck. The confusion occasioned by the falling of the chimney and the mast, together with the cries and shrieks of the women and children, defies description. Men were seen taking leave of their wives; wives were clinging to their husbands; and persons were running about in all directions, uttering the most piteous and heartrending cries. From the weight of the chimney, the vessel continued lying to windward, and very soon after the mast went the weather boards gave way; and as the waves then swept the deck the passengers stationed themselves on those parts of the vessel which lay highest. Several climbed up the mast which was left standing; others got on the poop. The weather boards on the leeward side were then washed away, taking with them more than thirty people, who were clinging to them. The cries were now more dreadful than before, every succeeding wave sweeping numbers from the wreck. I took a situation beside one of the paddle-boxes, and whilst there a young man came to me with a large drum, and said it would save both of us, if I held on one side and he on the other. Some females came and clung round us, but the young man stuck to the drum, and told them to get hold of the first piece of timber they could. . . . Of what further happened I have but a confused recollection, and it appears to me like the traces of a horrible dream. It seemed as if I had been in the water many days, when I heard the welcome sound of a human voice shout 'Holloa!' to which I also shouted 'Holloa!' Soon after I was lifted out of the water, and placed in a boat belonging to R. Williamson, Esq., who, when he was informed of the calamity which had befallen us, manned two boats, and came out to pick up the sufferers. On being taken up I asked my deliverers when it would be daylight, and they told me it was broad day—it was about ten o'clock in the forenoon. I was stone blind. Mr. Williamson and the boat's crew were most kind to me. I was kept on board until I was sufficiently restored to meet my sister and the other survivors at Beaumaris. I cannot omit to express my most grateful thanks to my deliverers and benefactors. Their noble humanity has left an impression on my heart which will never be effaced but with my existence."

"Amidst these almost overwhelming distresses," says the Rev. Mr. Stewart, in one of his letters to a friend, "involving in one general calamity men, women, children, and even tender infants, it is a rest to the heart to turn for a moment to some special marks

of divine mercy. I am sure, my very dear friend, the following incident, related to me by the father of the boy, will deeply affect you. He was near the helm with his child, grasping his hand, till the waves, rolling over the quarter-deck, and taking with them several persons who were standing near them, it was no longer safe to remain there. The father took his child in his hands and ran towards the shrouds, but the boy could not mount with him. He cried out, therefore, 'Father! father! do not leave me!' But finding that his son could not climb with him, and that his own life was in danger, he withdrew his hand. When the morning came, the father was conveyed on shore with some other passengers who were preserved, and as he was landing he said within himself, 'How can I see my wife without having our boy with me?' When, however, the child's earthly parent let go his hand his Heavenly Father did not leave him. He was washed off the deck, but happily clung to a part of the wreck on which some others of the passengers were floating. With them he was almost miraculously preserved. When he was landing, not knowing of his father's safety, he said, 'It is of no use to take me on shore now I have lost my father.' He was, however, carried, much exhausted, to the same house where his father had been sent, and actually placed in the same bed, unknown to either, till they were clasped in each other's arms."

Among the victims was that of a lady entirely *unknown*. The body of this poor creature had been picked up near Conway, and it was evident that she had been one of fortune's favourites, though destined to a death so cruel. She was elegantly and fashionably attired, wearing rich earrings, gold chain and locket, three valuable rings in addition to her wedding-ring, and so forth. In a day or two she was buried in a common deal shell, and followed to a nameless grave by strangers.

It appears, by the pilot's statement, that early in the afternoon he had been invited by the steward to take some refreshment with him, and in the course of conversation a very strong opinion was given by the steward that Captain Atkinson never *intended* to reach Beaumaris, and that the voyage he was now making would be his last. By the expression "*intended*" he explained was meant *expected*, and the result proved the opinion to be too fatally correct. Tired by what he had gone through before entering the packet, the pilot lay down in the fore-castle to sleep. He was aroused by a sensation beyond all others most dreadful—he felt the vessel strike, and his experience told him all was over. Hastily rushing upon deck, his courage and coolness were for a moment quite overcome. "I saw," said he, "the quality huddled together in the waist of the vessel; and the praying and crying was the most dreadful sight to witness. The waves broke over on both sides, and took away numbers at once. They went like flights, sometimes many, sometimes few; at last the bulwark went, and none were left."

The vessel had scarcely struck when the two stays of the chimney broke. These, after many ineffectual efforts, were again made fast; but they soon gave way a second time, and the chimney fell across the deck, bringing the mainmast with it. The mast, it is stated, fell aft along the lee or larboard side of the quarter deck, and struck overboard some of the unfortunate creatures who had there collected. The steward of the vessel and his wife lashed themselves to the mast, determined to spend their last moments in each other's arms. Several husbands and wives seem to have met their fate together, whilst

parents clung to their little ones. Several mothers, it is said, perished with their little ones clasped in their arms. The carpenter and his wife were seen embracing each other and their child in the extreme of agony. The poor woman asked a young man, Henry Hammond, to pull her cloak over her shoulders, when a tremendous wave came and washed off, in a moment, twelve persons, and her among them.

Soon after the crash the captain's voice was heard for the last time. He and the mate appear to have been the very first that perished, and the conclusion is that they must have been dragged overboard by the wreck of the mainmast. It is true that an absurd report was spread in Beaumaris that both captain and mate reached land safely in the boat, part of which was found on shore early in the morning. This is unlikely; but it is quite possible many lives might have been saved in the boat, *if she had been provided with oars*. The absence of these, however, shows in a glaring manner the utter recklessness of human life which marked the whole affair. It was stated by Mr. Henry Hammond, ship-carver, of Liverpool, one of the persons saved, that it was not true that a party of the passengers got into the boat soon after the vessel struck, and were immediately swamped. The statement he gave was that the boat was hanging by the davits over the stern, nearly filled with water in consequence of the spray; when the vessel struck, he and the wife and child of the carpenter got into the boat, but left it again, being ordered out by the mate, who told them it was of no use, as no boat could live in such a sea. The boat soon after broke adrift and was lost, but there was no person in her.

"For above a mile and a half to the spit-buoy in the Friar's Road," says Morrison, "the sand is dry at half ebb, and as the Dutchman's Bank is dry at low water, I have no hesitation in affirming that there was dry land within half a mile of the wreck when she struck; and that if they had *been informed* of the fact, many of them on board might have swam or been drifted over the Swash, and within two hundred yards of the vessel would have found themselves in not more than three or four feet of water."

The Swash is very few feet wide, and was only passed by one individual, who, being a resident in Bangor, knew the locality, and escaped, according to Mr. Whittaker's narrative, who states as follows:—"At this time a gentleman from Bangor left the vessel, with a small barrel tied beneath his chin, and an umbrella in his hand, which he unfurled when he got into the water, in the hope of being drifted ashore in time to send some aid to his fellow-sufferers." This was Mr. Jones of Bangor. Now, if Mr. Jones, the pilot, or the captain or mate, or any other person on board, who knew of the vicinity of the dry sand, on which people walk at low water, had explained to the persons who could swim the state of the case, many others might have been saved as well as Mr. Jones.

A Mr. Tarry, who was exceedingly apprehensive during the passage, kept his wife and children in the cabin; on the vessel striking he made immediate inquiries respecting their probable fate; and Jones, the pilot, having indiscreetly said that there was no hope of safety, he became at once calm, and said in a tone of resignation, "I brought out my family, and to return without them would be worse than death; I'll, therefore, die with them." He then went down into the cabin and embraced his wife and children. It would appear that they afterwards, impelled by a sense of self-preservation,

came on deck; one at least of his little girls was seen afterwards in a state of pitiable helplessness. Mr. Duckworth, of Bury, who survived the catastrophe, says that while sustaining his wife he saw her on the quarter-deck. She was about ten years old. Each wave that broke down on one side of the vessel hurled her along with impetuous force, and dashed her against the gunwale on the other side; and then it would recede, and draw her back again, a ready victim for another similar shock. The poor innocent, bruised and half choked with the waves, sent forth the most piteous cries for her father and mother between each rush of the waters. Her shrieks were piercing beyond description, and she screamed "Oh! won't you come to me, father? Oh, mamma!" &c., till the narrator says his heart yearned to save her; and though he dared not quit his wife, he called to a fellow-passenger to make the effort; but he believes she was washed away soon afterwards.

"A schooner, belonging to a nephew of Alderman Wright, was lying off Beaumaris Green; the persons on board heard the bell ring in the *Rothsay Castle*, but in consequence of no light being displayed, which the captain refused to allow, they could not tell in what direction to go to render assistance. They eventually saved several persons who had been seven hours in the water. Such was the state of anxiety of the poor creatures, who had been so long hanging to the wreck, that they imagined, when taken up at seven o'clock in the morning, that it was noon."

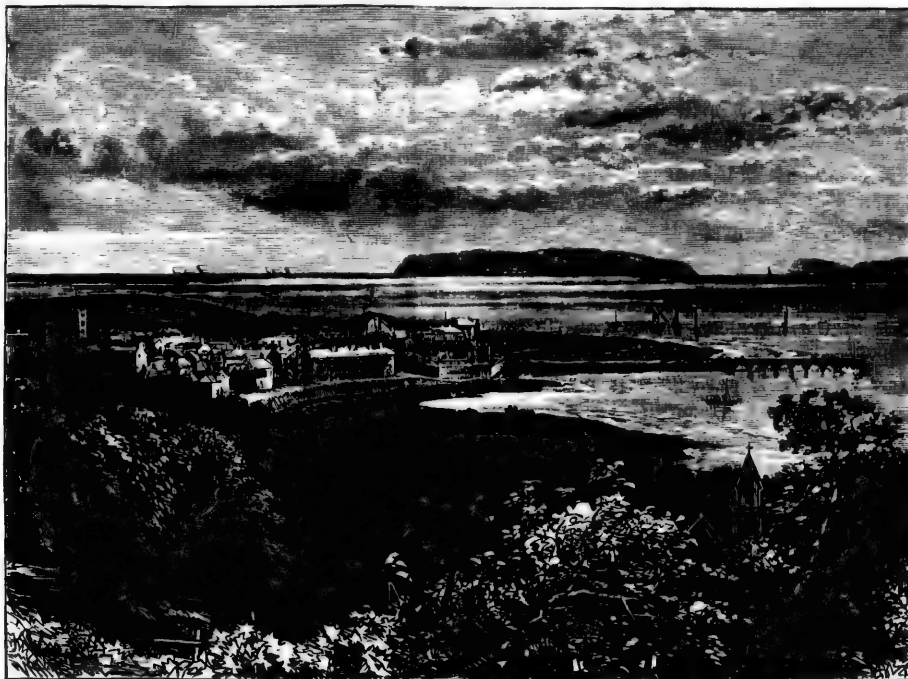
Lieutenant Morrison speaks highly of the humanity and honesty of the Welshmen of the coast on which the unfortunate vessel was wrecked, and contrasts their conduct with that of the people of certain other places. He remembered, in the year 1816, witnessing the wreck of a vessel near Appledore, in the Bay of Barnstaple, when the country people came down in crowds to plunder the wreck, and they drove the poor seamen back into the surf wher they attempted to rescue a part of their property. In the winter of 1827 he recalled the case of a crowd surrounding the mate of a Welsh sloop wrecked on the coast of Waterford, whom they knocked down and robbed of a small bundle of clothes, all that he had saved from the wreck.

The wreck about to be described occurred in January, 1838, and has been recorded in a graphic though somewhat verbose pamphlet,* which it is very unlikely has reached the eyes of many of our readers. It has often struck the writer that the most fascinating and interesting descriptions of wrecks have not been written by sailors, and there is a sufficient reason for this. Many of the episodes which strike a landsman forcibly, and add greatly to the picturesque *ensemble* of his narration, are taken by the seaman as mere matters of course. Several of the more detailed and interesting narratives already given have been taken from accounts recorded by the members of other professions, clergymen and military men more particularly. The present account is compiled from the narrative furnished by a medical man.

The *Killarney* sailed from Cork on the 19th January of the above year, with about fifty on board, passengers and crew. The weather was very severe, the wind blowing hard from the east, accompanied by snow and hail squalls; and the captain, after vainly endeavouring to make headway, turned the vessel round and returned to Cove Harbour. The weather

* "Narrative of the Wreck of the Steamer *Killarney*," &c. By Baron Spolasco, M.D., &c., &c.

moderating, the *Killarney* again got under weigh for her port of destination, Bristol. Again a storm rose, and the mist became so dense that they could scarcely see the vessel's length ahead of them. During the night 150 pigs—about a fourth of the number on the vessel—were washed overboard; the cabin was a wreck of furniture and crockery; and Dr. Spolasco's gig had been forced from its lashings, broken up, and partly washed away. The engine stopped for some time, and the vessel lay to, the captain not knowing his position. A suspicious circumstance, showing that the men were disheartened and greatly fatigued,



DEAUMARIS.

was that they came down to the cabin and asked for bottles of porter, &c.—a most unusual request, of course. Lieut. Nicolay, a military passenger, remarked, "I don't like to see these men getting porter in this way; I was once at sea in great danger, and the sailors through desperation commenced to drink." If the sailors were doubtful of the vessel's safety, there can be little wonder that the passengers generally were in a state of grave alarm. Baron Spolasco had his boy, a helpless child of nine years of age, on board, and between his care, giving advice to passengers, and setting the leg of the under-steward, who had broken it in a violent fall caused by the lurching of the ship, he had enough to do. At noon of Saturday it was whispered that the captain intended to try for land, but no one on board appeared to know whether they were twenty or fifty miles from it. The weather increased in severity.

In these trying moments, the captain, mate, and crew, endeavoured to perform their duties, and used every exertion in their power to weather the dreadful storm; but the water gained incessantly on the pumps, and the vessel continued to fill, and, being almost on her broadside, the deck was nearly perpendicular. The sea broke over her continually, and the passengers crawled about on hands and knees. Spolasco inquired of M'Arthur, the chief engineer, entreating him to let him know how the water stood in the engine-room. He seemed much exhausted, and said, "We're getting the water down to the plates of the engines; the fires are re-kindled, and we'll soon have steam on." For a time this was successfully done.

Lieut. Nicolay was the first to announce "Land at last!" to the passengers, and all hearts beat with joy at the welcome news. But they were greatly puzzled, and indeed mortified, that they were unable to ascertain what land it was. Some said that it was Poor Head, others that it was Kinsale, and others that it was Youghal, and others again that it was Cork Harbour. But the vessel was now utterly unmanageable.

The captain again did his best to re-make Cork Harbour, but it was out of his power, the sails having been blown to ribbons, and the fires put out owing to the repeated shipping of the seas. The engines went on pretty well when they commenced working a second time, but they shortly became less and less powerful from the cause just assigned. About three o'clock in the afternoon she had drifted near some rocks, the vessel being then nearly on her beam ends. It was all that the passengers or crew could do to hold on the bulwarks or ropes, and from the terror depicted on every countenance it was evident that the vessel was at hand. The vessel struck, and a simultaneous thrill of horror passed through every breast. Two gentlemen were, it was believed, washed overboard at this time.

A heavy sea then struck abaft the paddle-box, carrying off all before it. The doctor descried poor Nicolay on the top of a wave, like a mountain over them, as it were riding on, and buffeting in vain with his gigantic enemy. An awful and terrific scene was witnessed while grasping his child and the companion. "I believe," says he, "it was the same sea, or one instantaneously succeeding it, that struck the companion, and carried me and my dear little charge across the deck. Had it not been for the remnant of the bulwarks, viz., two uprights, across which a deck-form was forced, which proved the simple means of saving our lives at that period—were it not for this circumstance, my child and myself must have perished with Nicolay and others. Several fragments of deck-rigging fell upon us—such as ropes, spars, splinters, &c.; and it was with the utmost difficulty that I was enabled to extricate myself and child from them, in doing which I lost a shoe. It is worthy of remark that I had not worn shoes for more than six months before, having put them on that morning, considering that they would contribute to my ease while on board. My little boy also lost a shoe and cap owing to this circumstance. I now ought to remark, before I proceed further with this painful narrative, that immediately, or rather before, the engines stopped the second time from the vessel filling with water, the engineers and firemen came upon deck, from the impossibility of their remaining any longer below, the steam gradually going down, and the engines consequently decreasing in power till they came to a stand. All further efforts on their part being unavailing, and destruction being inevitable, all rushed upon deck, leaving the engines in order to save their lives."

Matters for some time continuing thus, the sailors and some of the deck passengers exerted themselves, and were engaged in endeavouring with buckets to lighten the vessel of some of the water in the hold; and, after several hours' hard work, they so far succeeded (the pumps all the while kept going) as to be able early on Saturday afternoon to get up steam again.

A passenger pointed out a bay, which he said was Roberts' Cove, and recommended the captain to run the vessel in there, as there was a boat harbour in it, and beach her. The captain said that he did not think there was a harbour there—that, at all events, it would be impossible to make it. The vessel was all this time drifting nearer the rock on which she ultimately struck; and in about an hour after the passenger had given the recommendation alluded to, the captain got the vessel round, and endeavoured to make Roberts' Cove. Just as he had got her before the wind, however, she was pooped by a tremendous sea, which carried away the taffrail, staunchions, the wheel (and two men who worked it), the companion, the binnacle, and the breakwater. The two steersmen fortunately caught part of the rigging, and were saved; but the sea which did the damage carried away the bulwarks, with some of the steerage passengers, who were standing near the funnel, and cleared the deck of all the pigs that were on it.

In consequence of all the hands having endeavoured to save themselves, the vessel was left to herself, and continued to strike piecemeal on several minor rocks, as she was driven before the fury of the waves over them with a clap—a crash resembling thunder—carrying off at each stroke one or more human beings, together with some portion of deck, deck furniture, deck trimmings, rigging, &c. To hear the wrenching of the vessel, now between the roaring billows and the rock, together with the cries of the sufferers, was soul-piercing in the extreme.

It was absurd to think, even for a moment, of lowering the quarter-boats, the tempest raged so furiously. Previously to the vessel striking on the rock which rent her asunder, and upon which she went to pieces, passengers and seamen all ran up for self-preservation on the quarter-deck. A terrible rush was then made for this, their last resource; and catching his child, Doctor Spolasco held him in his arms, and he clung close round his neck with all the strength of his little embrace, looking imploringly in his face for protection, and, as if foreseeing his fate, said, "Papa, kiss me! Papa, kiss me! We are all lost!"

The last moment approached. The crisis was at hand. Struggling on with his beloved charge, the doctor sprang forward with him, clasping him closely to his breast, and, creeping on his hand and knees, dragged his child along under one arm, while he held by the fragments of the bulwarks, shifting his hand from splinter to splinter, until he slowly and gradually reached the stern, the heavens lowering, the tempest raging, and the billows washing over them, drenched to the skin, and every instant gasping for breath, the waves suffocating them, the billows every instant beating against them.

Some time previously to this both passengers and crew knew not how to act or what to attempt to secure their safety, such was the distraction of their minds. The direction of the vessel was no longer thought of or attended to; each individual holding on by anything that he could possibly grasp for temporary safety with one hand, while he was seen

pulling off his clothes with the other, in readiness to be freed from the encumbrance of them, that he might be enabled to make a last, a desperate effort to swim ashore.

This was indeed a struggle for life and death, but bordering so nearly on the latter; some dressing again, and again undressing; again hesitating, frantic and desperate, till not another moment was left for deliberation. Crash! crash! crash! came in awful



ENTRANCE TO CORK HARBOUR.

quick succession, mingled with the piteous, the soul-harrowing cries, "For pity's sake, help! help! help!"

More than half an hour previously to the vessel's striking on that Saturday, between three and four in the afternoon, although instantly expecting to go down, ten or twelve persons were seen on the neighbouring mountainous promontory, and it afforded them some glimmering of satisfaction—some faint ray of hope that they would not perish in sight of land. They were observed as early as three o'clock on Saturday, but no efforts were made to rescue them till long after. A part of them gained the rock on which the vessel struck previously to the night's setting in, where they remained all Sunday and part of Monday, wet, cold, and nearly starved.

"I desired my child," says Spolasco, "as he loved me, to cling close, while I went to render assistance to others, who were loudly imploring for aid. The darling child, who was evidently sick and exhausted, obeyed; and I, alas! trusted to his puny strength to hold on.

"I sat for a moment on the rock, kissing him, till I looked round and reflected on the awful scene before me, and beheld (with what emotion I leave you to guess) the dreadful destruction which was going on.

"Previously to my jumping on the rock I observed Mrs. Lawe on the quarter-deck on her knees, frantic, without her cap, her hair dishevelled all around her shoulders, in dreadful anguish, striking the deck with one hand, while she held on with the other. Mr. Lawe, her husband, was at this time drowned.

"About this period the midships of the vessel were thrown by the terrific sea and raging storm into a position favourable for those yet on board to make their escape upon the rock; thus it was with comparative ease the surviving remnant on board now forsook the vessel.

"In short, if the sufferers could have anticipated and waited for this opportunity, the lives of many who were lost might have been saved. They would, at least, have been fortunate enough to have reached the rock, and would have had the same chance of existence as others, provided their constitution were sufficiently strong to bear the dreadful privations that there awaited them.

"I stretched forth my hand and assisted several as they approached, taking hold of the first that presented, making, of course, no distinction of persons, and continued to act thus till I saw a female in the last gasp, still holding by the rock after the receding of a wave—it was Mrs. Lawe. Then, with all the force I could command, I dragged her forwards one or two paces. She was, indeed, poor good lady! in the last stage of exhaustion, and fell on my arm, and her weight caused me to slip, by which we were both precipitated towards a frightful chasm; but luckily I again seized the rock ere the wave retired, or we might both have been swept away, and I held fast by one hand, while with the other I supported the lady, during which two or three waves washed over us. Neither she nor I could breathe.

"I collected all my remaining strength for this the last effort I was equal to in order to save her, and folding her in my arms, I crept up the rock quite above the surge, where the spray only could reach us.

"She was speechless, but sufficiently sensible to acknowledge my attention with looks of fervent gratitude. I then left her, anxious to return to my child. But judge of my sensations—I found him not! He, alas! was gone! I could not tell where, or what had become of him." The poor boy had been drowned, and no traces of him were ever discovered.

Their sufferings on the rock are well described:—"To such dreadful shifts were we driven that during the night I was obliged to hold on with one hand, while with the other I grasped the hand of a fellow-sufferer, in order that each might receive some portion of vital heat; this we did alternately with right and left hand. But we were all so depressed in spirits and suffering so grievously from the cold and the rain as the night advanced, that we did little else than turn our thoughts to the Most High, and calmly await the approach of day, and with it some hope of relief. My face, nose, and particularly the inside of my mouth, were dreadfully mangled, and my teeth loosened, being so repeatedly forced by the billows against the rock to which I was clinging. In short, I think no human endurance equalled ours; for towards morning, when my fingers became so benumbed from wet and cold that I lost the use of them, and I found that it was impossible to hold on longer, I twice felt resigned to

commit myself to the deep, and was on the point of doing so, invoking Heaven to receive my spirit.

"The very lacerated state of my nose, mouth, and feet," says the doctor, "when I was borne from the rock, were indicative of the sufferings I had endured. Poor M'Arthur seemed either quite regardless of, or insensible to, my repeated warnings of his danger. He at last put his hands into the pockets of his trousers, in spite of my remonstrances to the contrary. The point of the rock on which he stood affording him a better foothold, or standing, than mine, and that portion of the rock immediately before him not being so perpendicular as that before me, allowed him to bend forward. This last advantage, coupled with that of his better footing and his being overpowered with sleep, induced him to be so careless of his safety. But almost instantly a fearful and tremendous sea struck the rock just below the slight shelves or openings which supported our toes, and immediately rebounded over us many feet in height; then breaking and falling with great force on our heads, it had the effect of hurling off on the instant poor M'Arthur. O gracious God, I never can be sufficiently grateful for Thy bountiful goodness and singular preservation in protecting me through so many imminent perils, so many hair-breadth escapes! For of all the passengers with whom I dined on Friday in the steamer *Killarney* I am the only survivor! The cook who prepared the dinner, and the steward, steward's brother, and the stewardess that served it, are all in eternity!"

It was not till about ten o'clock on the morning of Sunday that the poor sufferers on the rock endeavoured to change their positions, which was a matter of some difficulty. One of the passengers, during the early part of the night, having been unable to attain a position as comfortable as that of some of the rest, had hung on to Dr. Spolasco's legs, in order to save himself from dropping into the sea. Later a heavy wave struck him; he relinquished his hold, and was swept into the sea never to rise again. "On gaining the summit," says the doctor, "I perceived with horror that many had disappeared during the night, and among them the lady whom I had rescued at the loss, I may indeed fairly say, of my dear boy." There was a general hope among the survivors that they would be rescued early that morning (Sunday), and their disappointment that no effort was made to save them was great indeed. They saw at an early hour hundreds of peasants on the beach and cliff, some of them busily engaged at the wreckage or in bearing away parts of the pigs which had formed part of the cargo, but all intent upon gain. Not the slightest effort was made for the poor wretches on the rock, although Spolasco at intervals waved his purse in one hand and his cap in another in order to induce the peasantry to afford assistance.

The doctor endeavoured by signs to indicate that a raft could be easily constructed from the wreckage, and that the drift of the current would bring it to the rock, but he was not understood. Again their hopes fell to zero. Poor M'Arthur, the engineer, who had been nearly drowned before, had managed to struggle to a higher position on the rock, but he died from exhaustion early on Monday morning. Some time after, two men, and a little later two boys, fell headlong into the sea, being nearly dead from starvation and exposure. Of twenty-five who got safely on the rock, thirteen died before they could be rescued; and yet it was so near the coast that those mounting the

nearest cliff had to bend over its edge to see it. Meantime the storm beat on violently, and no boat could have approached the rock. Sea-weed and salt water was all the food (!) they could get from dinner hour on board the steamer on Friday, about five o'clock, till Monday afternoon. All this within almost a stone's throw of land !

"To return," says the narrator, "to Sunday. I have in a previous page stated that during the whole of the morning of that day, indeed up to the afternoon, all we saw was a crowd of peasants on the beach, each carrying his or her burden from the spoils of the wreck of the steamer *Killarney*; and on the cliff above us, numbers—altogether amounting to some hundreds. It was in vain we looked for some respectable person among them who would be likely to tender us the desired assistance, till . . . we hailed the presence of a respectable gentleman, by whose kind gestures we could understand (for it was impossible to hear his voice) that we yet should be saved. After waving his hat, and doing all in his power to cheer us, he retired, and ascended the lofty cliff, and in a reasonable time afterwards again returned, with several other gentlemen.

"Several descended with him to the edge of the precipice—a dangerous declivity—bringing with them ropes, slings, &c., and indeed every other requisite that the short period of their absence allowed them to procure, or whatever appeared to them necessary for the object they had in view. Having arrived at the brink of the precipice, somewhat in a direct line (though still above us) with the rock upon which we were—the distance I would compute to be from a hundred and fifty to two hundred feet—they commenced throwing stones to which were attached small lines, several in their turn; one having failed, another tried, and so on, till they were sufficiently convinced that all such efforts were altogether fruitless—the strongest of them not being able to pitch such stone more than half way towards us.

"Some one then suggested the propriety of trying slings, which they immediately prepared—in turn taking off their cloaks, coats, &c., having first tied round their waist a strong rope as a prudent precaution of security for their safety in making the bold attempt, viz., of slinging a stone, having attached to it a line, to us unfortunate expectants upon the rock. These efforts, too, like the former, were attended with want of success.

"Mr. John Galwey, with whom was Mr. Edward Hull and other gentlemen, apparently in a most perilous position confronting us, formed a footing with crowbars, &c. Mr. Galwey was then observed several times to try to pass a duck with a small line fastened to its leg, but without effect. We also discerned him coiling a wire or line into the barrel of a musquet, with the view of firing off the ball to which it was connected, hoping that when the ball should have passed the rock the line might fall upon it. This expedient too was ingenious, but unsuccessful.

"The next attempt for our rescue was thought of and entered upon by a brave young gentleman, Richard Knolles, Esq.—son of the worthy Captain Knolles of that neighbourhood—by which he nearly lost his life. He had with him a favourite dog, well trained to the water, and apparently to his command, with which fine animal he descended as nearly to the edge of the beach as the billows, breakers, and foaming spray would allow him, and rather farther, for, being young, brave, and anxious to be the means of saving us, he ventured somewhat too far for his safety, being met by a tremendous surf, which struck him, and dashed him above some twenty feet or more with such violence, that he was not only wetted to

the skin, but had the narrowest escape that man could well have of being lashed into the furious sea and yawning gulf below him."

The news of their cruel sufferings having ere this spread around the country—this being Sunday, and rather more favourable than the previous days—thousands of both sexes assembled from miles around to witness the awful scene. They could clearly distinguish among the vast assemblage upon the cliffs a great number of ladies by their veils, drapery, &c., who doubtless had been attracted to the fatal spot through sympathy for their peculiar hardships. The shore appeared so near, and the day was so fine, that through the greater part of it they did not think, nor could bring themselves to believe it possible, that



THE SURVIVORS ON THE ROCK.

they were cruelly doomed to suffer another night upon the desolate rock; and it was thought by some (seeing that the distance to the cliff on the mainland was not very great) that a brave plunge into the waves would bear them on shore.

Hunger was keen indeed; it was piercing; and perceiving the people upon the cliff apparently unable to give them relief, one resolute but unfortunate man volunteered, and attempted to swim to shore, and, creeping down the rock, bade them farewell. They wished him, with all their hearts, success, each meaning to follow his example, if successful, rather than remain to perish on the rock. He rushed boldly into the surf; they all awaited his re-appearance with breathless anxiety, but he was rapidly hurried into the deep below, and they could discern him no more. All such attempts, or hope of such, to gain the shore by these means were then abandoned.

The second night was now closing fast upon them, and having observed that some preparations were being made on shore to extend ropes from promontory to promontory—a distance of from half a mile to a mile—they were all hovering between hope and fear. A

deathless silence reigned among them. Their gallant captain at length exclaimed, "I have it! They are carrying one end of the line to yon jutting promontory (east), and are running with the other end to the other promontory (west); the two ends of the line being drawn tight in opposite directions, the centre will overhang the rock, and be within our reach." As the sequel proved, his judgment was well founded.

"We now," says the narrator, "placed our whole reliance on the success of the efforts of those on shore with the ropes; but the apparatus employed was imperfect—time passing rapidly, and the night quickly approaching. Just at the commencement of dusk the rope reached us, which we were enabled to seize by a small tripping line that hung pendent from it when it was stretched over our heads, being drawn tight at each promontory by the many assembled." The captain, or some one of the men, caught the line and drew it downwards, when all seized it, and there was a wild huzza! The captain had been right in his conjecture. The line was extended from headland to headland.

"When the rope was conveyed to us," writes the doctor, "we all cheered, as if re-animated by a new existence; and although it reached us too late to be of any service on that night, such was our eagerness to be delivered from the rock, that one man volunteered, and immediately descended to the base of it, and by a triangular knot made himself fast to the hawser, which had been conveyed to us by means of the small lines already alluded to. The rope, or hawser, although not a new one, I think was sufficiently strong to bear one at a time to shore, and, indeed, up the lofty cliff, in safety; but a boy who had been in care of the pigs, unfortunately, through over-anxiety to escape from the rock, descended, and most imprudently attached himself also at the same time to it, notwithstanding our earnest remonstrances to the contrary; and when they said 'all was ready'—meaning that they were secured to the rope—at the same time directing us to shout to those on the mainland 'to pull them ashore,' we did so, and they immediately drew them towards the cliff, upon which we heard a splash, but could see nothing, it being at this time dark.

"During the night, when we occasionally conversed—for we had but little to say, each being wrapped up in his own gloomy meditations—we felt a glow of satisfaction that at last a contrivance had been resorted to by which two of us at least were rescued from spending another night upon the rock, we not at this time at all considering that both had met a watery grave, for we could see nothing—it was dark—neither could we hear anything, from the howling of the storm and roaring of the tempest.

"In the morning, however, in consequence of the rope having broken, we entertained a melancholy surmise of their unhappy fate; but upon landing, in the afternoon of Monday, we ascertained the piteous fact. It was rumoured, but it proved to be untrue, that the peasants, during the second night (Sunday) of our dreadful suspense upon the rock, had cut the rope. This arose in consequence of its having been found divided early on Monday morning."

Next morning the good Samaritans ashore repaired to the scene, and eagerly scanned the rock, to see whether any still survived. Among them was Lady Roberts, who came with thirty of her men, with a car laden with ropes and other materials necessary for their deliverance. The first plan attempted early on Monday morning was with Manby's apparatus—i.e., firing a two-pound shot with a line attached from a howitzer. After

many fruitless attempts this plan was relinquished. Slings, &c., were then tried, but with the same result.

Dr. Spolasco took off his cap, and repeatedly waved it, in order to attract the observation of those on shore. Having succeeded, he raised his voice and extended his arms, pointing to either promontory, and indicating that unless they had recourse to Mr. Hull's plan, as it was subsequently ascertained to be, their fate would be decided. Fortunately he was understood, and the plan was prosecuted to its completion, all working with a will. They again extended the lines from headland to headland, with this variation only, that they now attached two tripping-lines instead of one, hanging about a yard apart, and a weight to the end of each, which had the desired effect of causing them to fall immediately over the rock. They were immediately grasped; their hope of safety was fully revived, and they again cheered with hopeful exultation. They retained a secure hold of the centre of the line, while those upon the two cliffs proceeded to a centre point on the mainland immediately opposite to them, and instantly attached the hawser to one end of the line in question. Having accomplished this, they made signs to those on the rock to draw towards them the hawser, to which they had fastened a small basket containing a bottle of wine, a bottle of whisky, and some bread, the thoughtful gift of Lady Roberts. The liquids proved invaluable, but as for the bread, excepting a few crumbs, they could not swallow it. They had, from cold, exposure, and exhaustion, almost lost the power of mastication and deglutition.

The basket also contained a written paper, instructing those on the rock that, as the hawser was sufficiently long, to make it fast round the rock, that it might be the more secure, and that they would pass a cot along it with iron grummetts. Having so fixed the cot, the signals were made to draw it towards the rock by means of the small line. The awful example afforded on Monday morning, when it was perceived that the rope was broken, naturally made several of them nervous now, and there was some hesitation as to who should enter it first to be drawn on shore, seeing that it had to be hauled a distance of sixty to a hundred feet above the level of the sea in order to land upon the lowest accessible part of the cliff, where Mr. Hull, the inventor of the plan, was stationed to receive them. On landing, they had to be carried to the summit of the nearly perpendicular cliff, about 300 feet, upon men's backs, supported on either side by others of their deliverers, for the least false step would have hurried them headlong to the depths below.

After some deliberation, the first to be placed in the cot was a woman named Mary Leary, who was assisted into it, and drawn through the air to what seemed a frightful height, amid the cheers of all. On her being landed, the cot was again lowered to the rock, and the narrator of our story entered it, lying upon his back. Giving the signal that he was ready, those on the mainland pulled, and in a few minutes he was safe on the cliff, where he received the warm congratulations of the gentlemen there assembled. The ship's carpenter, who was evidently very ill, was next placed in the cot, but the poor fellow breathed his last almost immediately after landing. The others soon followed, the captain, as should be, being the last. Once ashore, they were treated with warm-hearted hospitality, and a liberal subscription was raised for the sufferers of the crew and passengers, and the widows and orphans of those who were

lost. Of fifty persons who left Cork on the ill-fated *Killarney*, about twenty-five landed on the rock, and of these only fourteen reached land, one of them, as we have seen, to expire immediately.

The mode by which the few survivors were rescued was so novel that it deserves particular notice, and the following, quoted from a letter written by Mr. E. W. Hull to Baron Spolasco, will be found interesting.

"The first intelligence my brother and myself received of the wreck was from Mr. John Galwey, at about nine or ten o'clock on Sunday morning. We immediately proceeded towards the scene of the dreadful catastrophe, which is about five miles from Roberts' Cove, and arrived there at eleven o'clock. My brother's men, of course, accompanied us. On our reaching the place, I descended the frightful precipice, at the foot of which I discovered Mr. Galwey letting ducks fly with lines attached to them. I joined him in the experiment, though indeed I entertained not the least hope of its proving effective. We abandoned this plan, and having taken off my coat and hat, and placed a rope round my waist, to prevent my falling over the lower cliff upon which we stood, I commenced using all the means I could devise to convey a stone with a line attached to it to the rock. I first made an effort to throw a stone from my hand; next, I, with others, had recourse to slings; but all our experiments, as the sequel proved, were useless. I may here, without the least exaggeration, assert that the danger to which Mr. John Galwey, young Mr. Knolles, and myself, were exposed was beyond the power of conception. Below us appeared a hideous gulf, almost yawning to receive us from the cliff upon which we stood, while from above we saw large stones rolling down from a height of two hundred feet. To avoid being struck by these we had not the power of moving an inch from the place in which we respectively stood; so that in this, as in all other circumstances connected with our dangerous undertakings on the occasion, we were protected in our frightful situation by the peculiar interposition of Providence. We next had recourse to the plan of a person named Mills, of the Coastguard at Roberts' Cove. It was that of attaching wire to bullets, and firing them from guns. This plan likewise proved unsuccessful.

"At this time, when all our plans had become unavailing, those who had been acting with me below went to the top of the cliff. Being exceedingly exhausted I was unable to follow. I lay down on the brink of the precipice, nearly on a line with the top of the rock upon which the sufferers were, and feeling as a human being should at so heart-rending a spectacle, when all hope of saving a single individual was almost extinct. I exclaimed, 'Good God! are there no means left to save them?' At this moment I took a view of the east promontory and the west. The thought—the happy thought—flashed across my mind. I immediately perceived that Providence favoured us with a tolerable certainty of success. I ascended the precipice, and made my brother acquainted with my plan. We both suggested it to others, but it was disregarded, owing to the great distance between the promontories and the immense height of the cliffs. However, I saw a glorious prospect before me of rescuing my fellow-creatures from an awful death. Heaven inspired me with confidence, and, in conjunction with my brother, I could not be diverted from making a trial. My brother and the neighbouring gentlemen sent in all directions for lines and ropes. On getting them, we commenced putting my plan into execution. The first attempt failed through want of sufficiency of rope and the setting in of night. When the rope was



RESCUE OF THE SURVIVORS OF THE "KILLARNEY."

carried to the rock and there secured, I perceived that one man got upon it. Had he alone ventured, all would be right; but the eagerness of another poor fellow was so great that he attached himself to it, and the weight of the two was overmuch for the rope to bear, and it consequently broke. How we felt at this dreadful occurrence your readers may imagine; I cannot describe the fearful thrill of horror which pervaded every breast. It was now dark night; we had therefore to discontinue our efforts until the next morning. We left the lines during the intervening night as we had adjusted them the evening before. My brother left two of his men, with one of Lieutenant Charlesson's, to preserve the rope and property during the night.

"To return to the subject of my communication, I should state that, on ascending the cliff I met Lady Roberts and Captain Knolles. I told them of the loss of one man, not knowing at the time that a second had also suffered—this information, indeed, I afterwards received from yourself. I, notwithstanding this sad disaster, felt persuaded that if I had a sufficient quantity of rope all would be saved. I mentioned this to Lady Roberts, upon which her ladyship assured me that I should be plentifully supplied with this article. Though painful to our feelings to be obliged to leave you to spend another night of gloom and horror, we were under the necessity of doing so for want of a sufficient quantity of rope. On the following morning (Monday) I arrived at the cliff, accompanied by my brother and his men, an hour before daylight. The weather was dreadful beyond conception, rain and snow falling incessantly. We immediately proceeded to bring into operation the plan of the former day. We were at this time much better enabled to do so, having obtained a sufficiency of rope by the directions of Lady Roberts, who, to the honour of her sex, was present at that early hour, exposed to the inclemency of the weather. Lieutenant Irwin, Inspector of the Coastguard at Kinsale, arrived about this time with Captain Manby's apparatus. This gentleman, having, I presume, had some previous experience of the capability of similar machines, commenced discharging balls from it. This suspended the operation of my plan for some time, but it was found altogether ineffective; but I consider it right to state that no man could have manifested a greater anxiety than Mr. Irwin to do good. The lines and ropes which he brought us were essentially necessary in putting the successful plan into execution; he also brought the cot. . . .

"In about two hours I had the satisfaction of seeing fourteen persons safely landed from the rock, but one of them, I regret to say, died of exhaustion a short time after having been brought on shore.

"The hawser, as you perceived, had to be taken down a precipice of nearly three hundred feet. To the end of it was joined the line which you had primarily received upon the rock, also a basket of refreshments. I myself took it all down to the lower cliff, where I received each person on being drawn from the rock. The dangers to which myself and three of the coastguard were exposed on that occasion were not, I assure you, trifling."

About a fortnight after the wreck of the *Killarney*, a large portion of the rock upon which the remnant of the crew and passengers had suffered so much was carried away in a storm. It is worthy of remark that during the American War a vessel conveying a company and band of the 32nd Regiment of Foot was lost on the same rock, when all perished.

There can be no doubt that a life-boat, had there been one, would have rescued many more of the poor unfortunates, left on the rock from Friday afternoon to Monday afternoon, with considerable ease. During the year 1876-77, not very far from *five thousand* lives were saved by the fleet of 269 boats of the National Life-boat Institution. Let us examine the wreck record of that period.*

We find that the number of British vessels which entered and cleared from ports of the United Kingdom during the year in question was 581,099, representing the enormous tonnage of 101,799,050. Of these ships, 224,669 were steamers, having a tonnage of about two-thirds of the above amount. During the same period 60,000 foreign vessels entered inwards and cleared outwards from British ports, representing a tonnage of nearly 20,000,000. These 641,099 ships, British and foreign, had probably on board, *apart from passengers*, 4,000,000 men and boys.

In 1876-77 the number of wrecks, casualties, and collisions, from all causes, on and near the coasts of the United Kingdom, was 4,164, which number exceeds that of the previous year by 407. 511 cases out of this large number involved total loss, 502 and 472 representing the same class of calamities for the two preceding years.

During the past twenty years—from 1857 to 1876-77—the number of shipwrecks on our coasts *alors* has averaged 1,948 a year, representing in money value millions upon millions sterling in the aggregate.

"In making this statement," says *The Life-boat*, "we lay aside entirely the thousands of precious lives, on which no money value could be placed, which were sacrificed on such disastrous occasions, and which would have been enormously increased in the absence of the determined and gallant services of the life-boats of the National Life-boat Institution.

"In the Abstract of the Wreck Register it is stated that, between 1861 and 1876-77, the number of ships, both British and foreign, wrecked on our coasts which were attended with loss of life was 2,784, causing the loss of 13,098 persons. In 1876-77, loss of life took place in one out of every twenty-two shipwrecks on our coasts.

"It is hardly necessary to say that gales of wind are the prime causes of most shipwrecks, and that those of 1876-77 will long be remembered for their violence and destructive character. Of the 4,164 wrecks, casualties, and collisions, reported as having occurred on and near the coasts of the United Kingdom during the year 1876-77, we find that the total comprised 5,017 vessels. Thus, the number of ships in 1876-77 is more than the total in 1875-76 by 463. The number of ships reported is in excess of the casualties reported, because in cases of collision two or more ships are involved in one casualty. Thus, 847 were collisions, and 3,317 were wrecks and casualties other than collisions. Of these latter casualties, 446 were wrecks, &c., resulting in total loss, 902 were casualties resulting in serious damage, and 1,969 were minor accidents. The whole number of wrecks and casualties other than collisions on and near our coasts reported during the year 1875-76 was 2,982, or 335 less than the number reported during the twelve months under discussion.

"The localities of the wrecks, still excluding collisions, are thus given:—East coasts of England and Scotland, 1,140; south coast, 630; west coast of England and Scotland,

* Our information is derived from an article on the subject in *The Life-boat* for November 1st, 1878.

and coast of Ireland, 1,259; north coast of Scotland, 129; and other parts, 159. Total, 3,317. "It is recorded that the greatest destruction of human life happened on the north and east coasts of England and Scotland."

It is interesting to observe the ages of the vessels which were wrecked during the period under consideration. Excluding foreign ships and collision cases, 221 wrecks and casualties happened to nearly new ships, and 396 to ships from 3 to 7 years of age. Then there are wrecks and casualties to 631 ships from 7 to 14 years old, and to 907 from 15 to 30 years old. Then follow 459 old ships from 30 to 50 years old. Having passed the service of half a century, we come to the very old ships, viz., 71 between 50 and 60 years old, 33 from 60 to 70, 24 from 70 to 80, 9 from 80 to 90, and 5 from 90 to 100, while the ages of 68 of the wrecks are unknown.

On distinguishing these last named casualties near the coasts of the United Kingdom, according to the force of the wind at the time at which they happened, we find that 739 happened with the wind at forces 7 and 8, or a moderate to fresh gale, when a ship, if properly found, manned, and navigated, can keep the sea with safety; and that 1,046 happened with the wind at force 9 and upwards, that is to say, from a strong gale to a hurricane.

"We must say one word on the subject of casualties to our ships in our rivers and harbours, as the fearful calamity to the steamer *Princess Alice* last September in the Thames has directed afresh intense attention to them throughout the civilised world. We find from the Wreck Register Abstract that the total number during the year 1876-77 was 984, of which 17 were total losses, 245 were serious casualties, and 722 minor casualties.

"Of these casualties, collisions numbered 658, foundering 13, strandings 184, and miscellaneous 129.

"These 984 casualties caused the loss of or damage to 1,725 vessels, of which 1,020 were British sailing-vessels, 560 British steam-vessels, 118 foreign sailing-vessels, and 27 foreign steam-vessels. The lives lost in these casualties were 15.

"With reference to the collisions on and near our coasts during the year 1876-77, 48 of the 847 collisions were between two steamships both under way, irrespective of numerous other such cases in our harbours and rivers, the particulars of which are not given in the Abstract. No disaster at sea or in a river is often more awful in its consequences than a collision, as was too strikingly illustrated last year in the cases of the German ironclad *Grosser Kurfürst*, and the Thames steamer *Princess Alice*.

"As regards the loss of life, the Wreck Abstract shows that the number was 776, and of these 92 were lost in vessels that foundered, 57 through vessels in collision, 470 in vessels stranded or cast ashore, and 93 in missing vessels. The remaining number of lives lost (64) were lost from various causes, such as through being washed overboard in heavy seas, explosions, missing vessels, &c.

"This number (776) may appear to the casual observer a comparatively small one by the side of the thousands who escaped disaster from the numerous shipwrecks before mentioned. We are, however, of opinion that it is a very large number; and when we bear in mind the inestimable value of human life, we are convinced that no effort should be left untried which can in any way lessen the annual loss of life from shipwreck on our coasts.

"On the other hand, great and noble work was accomplished during the same period, 4,795 lives having been saved from the various shipwrecks. In bringing about that most important service, it is hardly necessary to say that the craft of the National Life-boat Institution played a most important part, in conjunction with the Board of Trade's rocket apparatus, which is so efficiently worked by the Coastguard and our Volunteer Brigades.

"Nevertheless, the aggregate loss of life is very large, and so is the aggregate destruction of property. The former is a species of woe inflicted on humanity; the latter is practically a tax upon commerce. While the art of saving life on the coasts is understood (thanks to the progress of science—the earnestness of men—and the stout hearts of our coast population), the art of preserving property is as yet but imperfectly known amongst us, and still more imperfectly practised.

"On reviewing the Wreck Register Abstract of the past year, we are bound to take courage from the many gratifying facts it reveals in regard to saving life, which, after all, is our principal object in commenting upon it. Noble work has been done, and is doing, for that purpose; and is it not something, amidst all this havoc of the sea, to help to save even one life, with all its hopes, and to keep the otherwise desolate home unclouded?"

Among the useful works undertaken by the National Life-boat Institution is the discussion in its journal of all matters connected with the art of swimming, and swimming and floating apparatus. The Society also issues a valuable circular on the "Treatment of the apparently Drowned," to which further allusion will be hereafter made. The writer is so satisfied that no humane or charitable institution in the wide world is better or more economically managed than that under notice, that he would urge all readers of *THE SEA* to contribute to its funds. And although every reader may not be able to afford his guinea or guineas, he can contribute his shillings or half-crowns, and his influence in aiding one of the local branches, or in forming new ones. A number of life-boats stationed on various parts of the coasts were the gifts of other associations and bodies. The Civil Service, Corn Exchange, Coal Exchange, Freemasons, Odd Fellows, Foresters, Good Templars, and other orders, have contributed nobly. Several boats and stations, generally named after the particular fund, were contributed by London and other Sunday-schools, Jewish scholars, commercial travellers, workmen, yacht, boat, and other clubs; while three were the result of an appeal to the readers of the *Quiver*, two are credited to the *Dundee People's Journal*, and one each to the *British Workman* and *English Mechanic*. And in concluding the second volume of *THE SEA*, the writer considers that he has a special right to urge the claims of the Society on his readers, the subject-matter of its pages being taken into account.

END OF VOLUME II.

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